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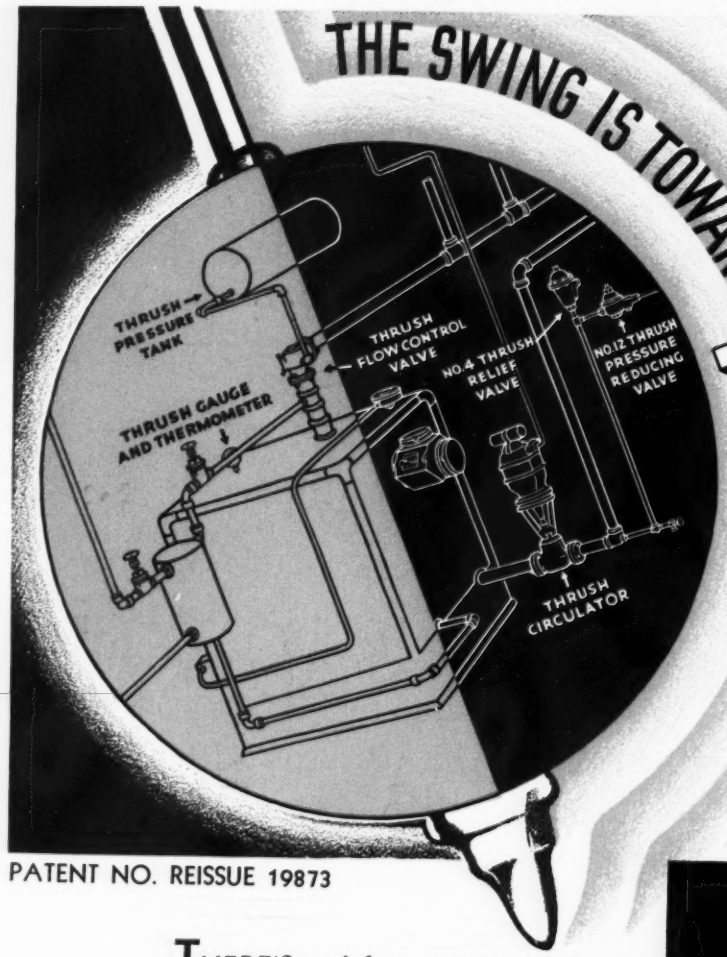
DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

THE SWING IS TOWARD THRUSH FLOW CONTROL !


THRUSH PRESSURE TANK
THRUSH GAUGE AND THERMOMETER
THRUSH FLOW CONTROL VALVE
NO. 4 THRUSH RELIEF VALVE
NO. 12 THRUSH PRESSURE REDUCING VALVE
THRUSH CIRCULATOR

PATENT NO. REISSUE 19873

THERE'S a definite swing toward automatic hot water heating this year. You can cash in on it if you will advertise and install Thrush Flow Control—the most efficient, completely automatic and economical hot water heating system ever developed. Because it is a forced circulating job, smaller pipe and valves may be used so that a completely modern Thrush controlled system for Summer-Winter use actually costs less to install than the old fashioned gravity job. Mail the coupon today!

H. A. THRUSH & COMPANY
Peru, Indiana

● **FORCED CIRCULATION**
Thrush Water Circulator cures circulation troubles.

● **FLOW CONTROL**
Thrush Flow Control Valve.

THRUSH
FLOW CONTROL
FORCED CIRCULATING
HOT WATER HEATING SYSTEM

COUPON

H. A. Thrush & Co.,
Box 459, Peru, Ind.

Please tell us how we can increase our business by recommending Thrush Flow Control Hot Water Heating System in our community.

Name.....

Address.....

City..... State.....

They're on the way!

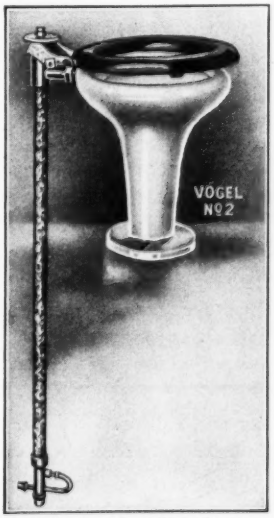
Freezing cold days and nights — sudden drops in temperature which take you unaware and mean burst pipes and cracked fixtures.

But VOGEL outfits are never caught "napping." Day and night, year in and year out, VOGEL Frost-Proof Closets and Hydrants are ready for the coldest weather and most severe winters.

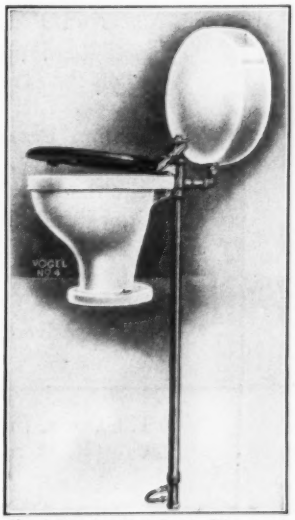
Your customers want the security and dependability of VOGEL Products. Recommend them for year 'round service. It will pay you in profits and satisfied customers.

JOSEPH A. VOGEL COMPANY, Wilmington, Del. · St. Louis, Mo.

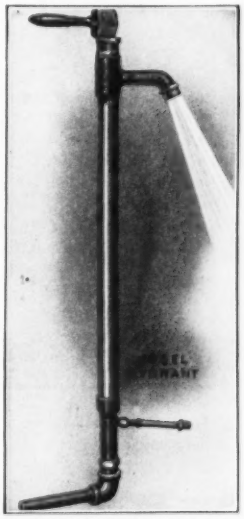
Vogel No. 1 — Many thousands in use in all parts of the country. Cannot freeze, no matter how cold the weather.



Vogel No. 2 — Frost-Proof Closet. A durable, low-priced outfit. Supplied with enameled rim hopper and reinforced hardwood seat.



Vogel No. 4 — Frost-Proof. China bowl, top supply. Same valve as the Vogel No. 1. As good-looking as a bathroom closet.



Vogel Frost-Proof Hydrant for outside installation and for use on farms, dairies and in unheated garages. Can never freeze.

VOGEL PATENTED *Frost-Proof* Products

DOMESTIC ENGINEERING

Plumbing & Heating Contracting and Merchandising

September, 1936

Vol. 148, No. 3

Whole No. 2021

Established 1889

Published Monthly by
Domestic Engineering Co.
1900 Prairie Avenue
Chicago

TERMS OF SUBSCRIPTION

Anywhere in the World, $2.00 per year.

Current copies, 25c each
Back copies, 50c each

Entered as Second Class Matter on September 26, 1932, at the Post Office at Chicago, Illinois, under the Act of March 3, 1879.

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Member of Audit Bureau of Circulations and Associated Business Papers.

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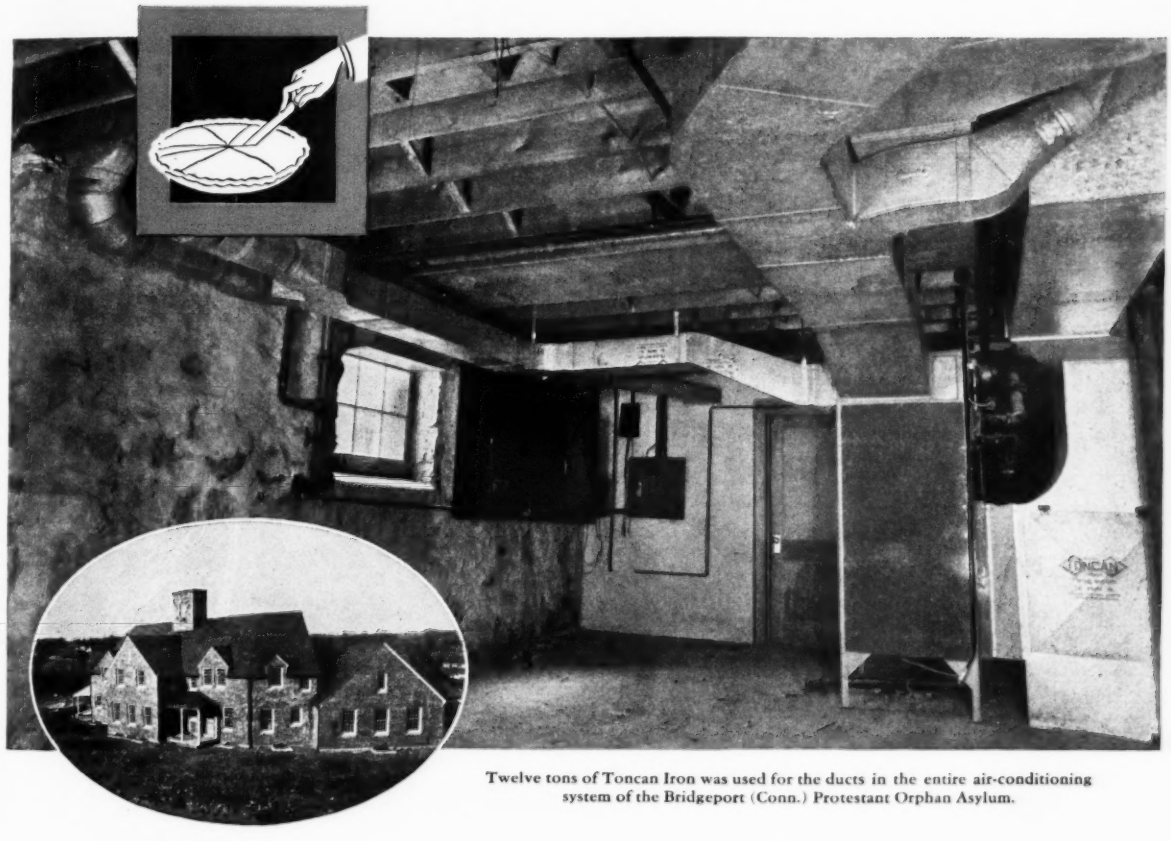
ARE YOU GETTING YOUR SHARE . . .



Twelve tons of Toncan Iron was used for the ducts in the entire air-conditioning system of the Bridgeport (Conn.) Protestant Orphan Asylum.

OF AIR CONDITIONING BUSINESS?

—and another question: "Are you realizing a satisfactory profit on the business you are getting?"

If the answer is "No" to either or both questions, you're missing an opportunity. Hundreds of thousands of dollars are being spent in air conditioning systems, and contractors all over the country, especially those who use Toncan Iron, are making money from this type of work.

Toncan Iron—the alloy of refined open-hearth iron, copper and molybdenum—resists rust better than any other ferrous material in its price class. It lasts longer and saves money in the long run. Hence, it will aid you to make sales—to obtain a greater share of the business available.

On the other hand, Toncan Iron will help you to enjoy increased profits. It is easy to fabricate—soft and ductile—and it speeds up work in the shop and on the job.

Team up with Toncan Iron for all types of sheet metal work and you'll install better work, create good-will, build a reputation for quality work, secure more contracts and enjoy greater profits. Write for a copy of "The Path to Permanence"—it tells the full story of Toncan Iron.

REPUBLIC STEEL

TONCAN

COPPER MO-LYB-DEN-UM IRON

Look to Republic as a major source of supply for flat and corrugated sheets—Plain Carbon Steel, Copper-Bearing Steel, Copper-Bearing Iron, Toncan Copper Molybdenum Iron and the famous Enduro Stainless Steels. A quality of sheet for every degree of corrosion-resistance.

VISIT THE REPUBLIC EXHIBIT AT THE GREAT LAKES EXPOSITION, CLEVELAND, OHIO, JUNE 27—OCTOBER 4.

Republic Steel CORPORATION

GENERAL OFFICES · · · CLEVELAND, OHIO

When writing Republic Steel Corporation for further information, please address Department D.E.

A Firing Chamber Completely Surrounded *by* Water

Plus 5-WAY heat travel

The FIRST *Oil-Burning Boiler to Combine these* TWO IMPORTANT FEATURES

NOT just another boiler! Not an ordinary boiler! But a specially designed OIL-HEATING unit . . . that gives *more* heat! That gives *greater* economy! That uses a *better* method of heat absorption. And finally, that *combines in one boiler* these TWO IMPORTANT HEATING FEATURES never before available in a single oil-burning unit.

NINETY-SEVEN YEARS of progressive heating engineering experience developed this extra efficiency . . . this improved Pierce unit, built exclusively for the use of oil.

See for yourself from the illustration (on the next page) how effectively the radiant heat is captured by the water. How water completely surrounds the firing chamber—*even at the bottom!* The Pierce has no heat losses through the base, a spot where all ordinary boilers waste heat.

Then note the 5-way heat travel: The flame that makes *two complete passes* in the firing chamber! That is then drawn back and forth *three times* through narrow flues, releasing the highest possible amount of heat to the water.

You make no experiment when you recommend the Pierce. The experimenting has all been done in our laboratories. The result has been proved in the actual use of hundreds of these boilers during the last severe winter. Weather that put them to gruelling tests.

AUTOMATIC

The Pierce is entirely automatic. It will operate with any standard oil burner. And it is made in sizes for all homes. It is the only oil-burning boiler of its type with a range up to 3000 ft. of steam radiation.

Mail the Coupon for free booklet telling all about this outstanding oil-burning boiler.

PIERCE BUTLER RADIATOR CORPORATION
Syracuse, New York

Oil-burning Boilers
Coal-burning Boilers
Conversion Oil and Gas Boilers
Stoker-fired Boilers
Steel Boilers
Ames High Pressure Boilers
Ames Una Flow Engines

PIERCE

NO HEAT LOSS EVEN HERE

FEATURES ★ ★ ★ ★ ★

Designed exclusively for oil. . . For steam, hot-water or vapor heating systems. . . Completely automatic—requires no attention. . . Low oil consumption. . . Attractive jacket, insulated against heat and sound. . . Adaptable to any oil burner. . . Front or rear firing.

MAIL THE COUPON TODAY . . .

PIERCE BUTLER RADIATOR CORP.
701 Nichols Ave., Syracuse, N. Y.

Yes, I'm interested. Send me without obligation—

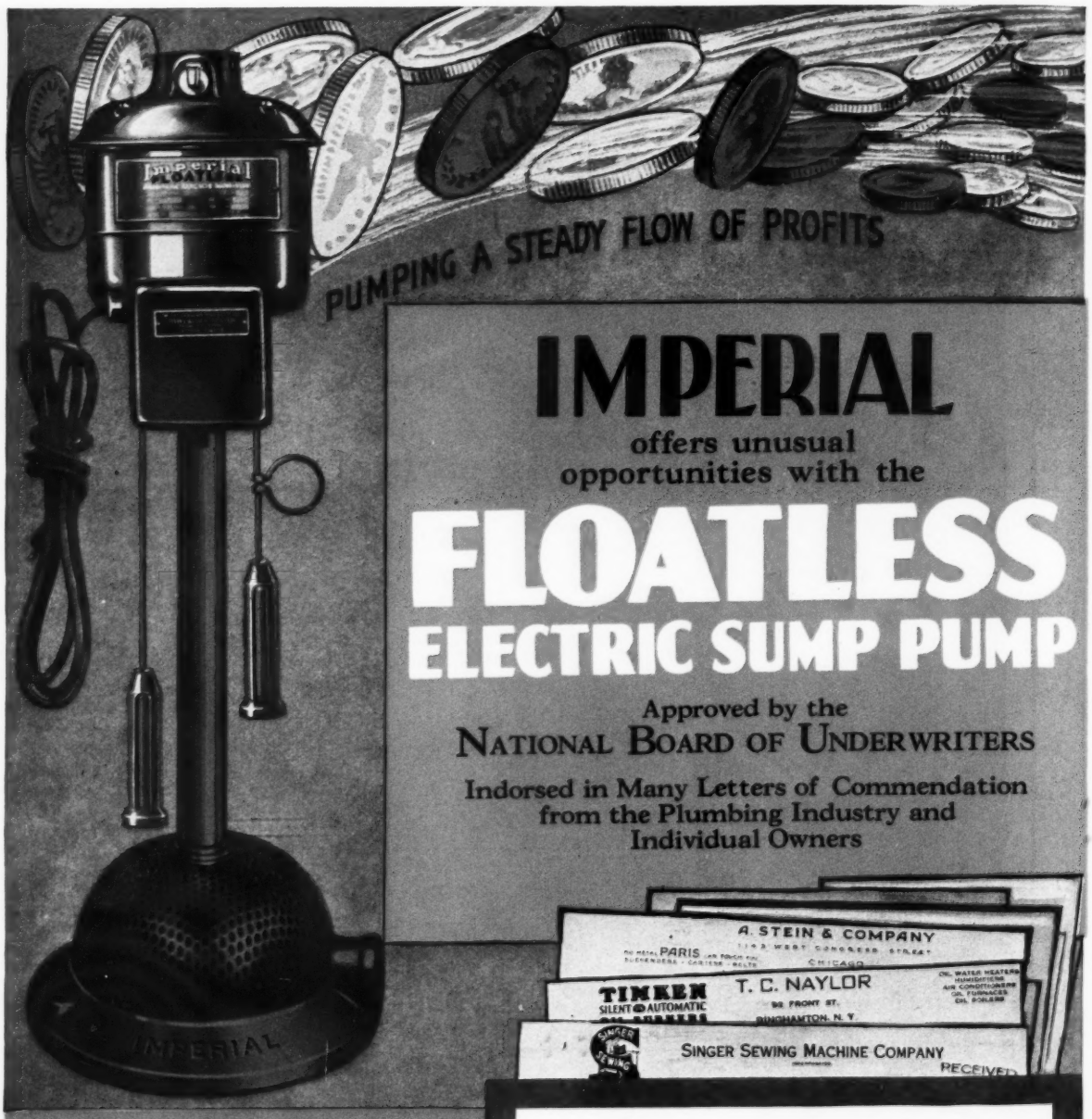
☐ Folder and full information on Pierce Oil-burning Boiler.

☐ Pierce Catalog showing your complete line of heating equipment.

Name .....

Address .....

OIL-BURNING BOILER



PUMPING A STEADY FLOW OF PROFITS

IMPERIAL

offers unusual opportunities with the

FLOATLESS ELECTRIC SUMP PUMP

Approved by the
NATIONAL BOARD OF UNDERWRITERS

Indorsed in Many Letters of Commendation from the Plumbing Industry and Individual Owners

Six Models for All Sump Depths

$39.50 UP

Write for Illustrated Pamphlet

IMPERIAL BRASS MFG. CO.

1231 West Harrison St., Chicago
210 East 45th St., New York, N. Y.

ONE of the heavy money-makers this fall and winter will be the Imperial Floatless Sump Pump. A sure sign is our growing file of letters from owners and members of the trade. Experience has shown them the advantages of floatless control—freedom from trouble and interrupted operation due to sand or sediment in the water.

Clogged float action is impossible, as no float is used. Two electrodes control water-level. Pumping starts when the water reaches the upper electrode, and stops when the lower electrode is clear.

The Season for Quick Profits

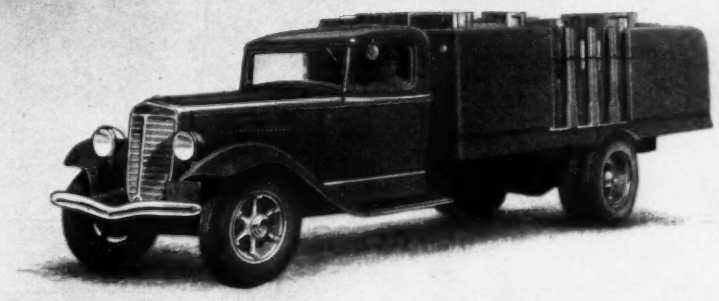
You will cash in faster on the active demand of the fall months if you keep a stock of the different models for demonstration; your jobber will supply you.

"No Float—But Greater Profits"

Another Example of the FLEXIBILITY in the

INTERNATIONAL TRUCK *Line*

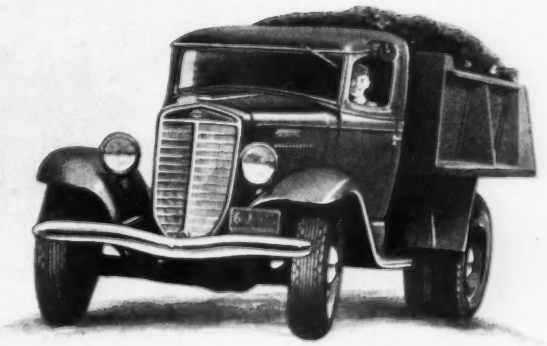
Here are 3 Popular Models, basically the same—but VERY DIFFERENT!



This is International Model C-35, a quality truck of 1½ to 2-ton rating with a max. carrying capacity of 8,350 lb. (cab, body, payload, and equipment)—International-built throughout—the ideal unit for a thousand-and-one hauling requirements.

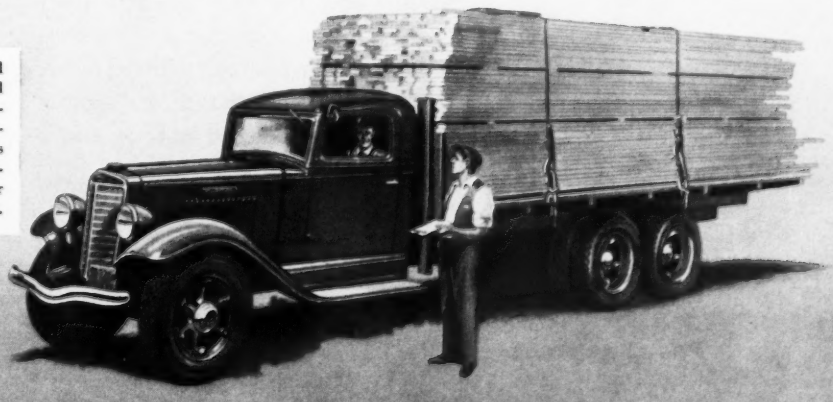
This is just one example of International Truck FLEXIBILITY—the full line offers a wide range of choice to make full efficiency on any job—on YOUR particular job, whatever it is. Remember that there are 28 International models—sizes Half-Ton to biggest Six-Wheelers—in 83 wheelbase lengths. Chassis prices from $415 up, f.o.b. factory. Low time-payment rates apply on all models. International branches and dealers are always at the service of truck users. They will be glad to advise you.

INTERNATIONAL HARVESTER COMPANY
606 S. Michigan Ave. (INCORPORATED) Chicago, Illinois

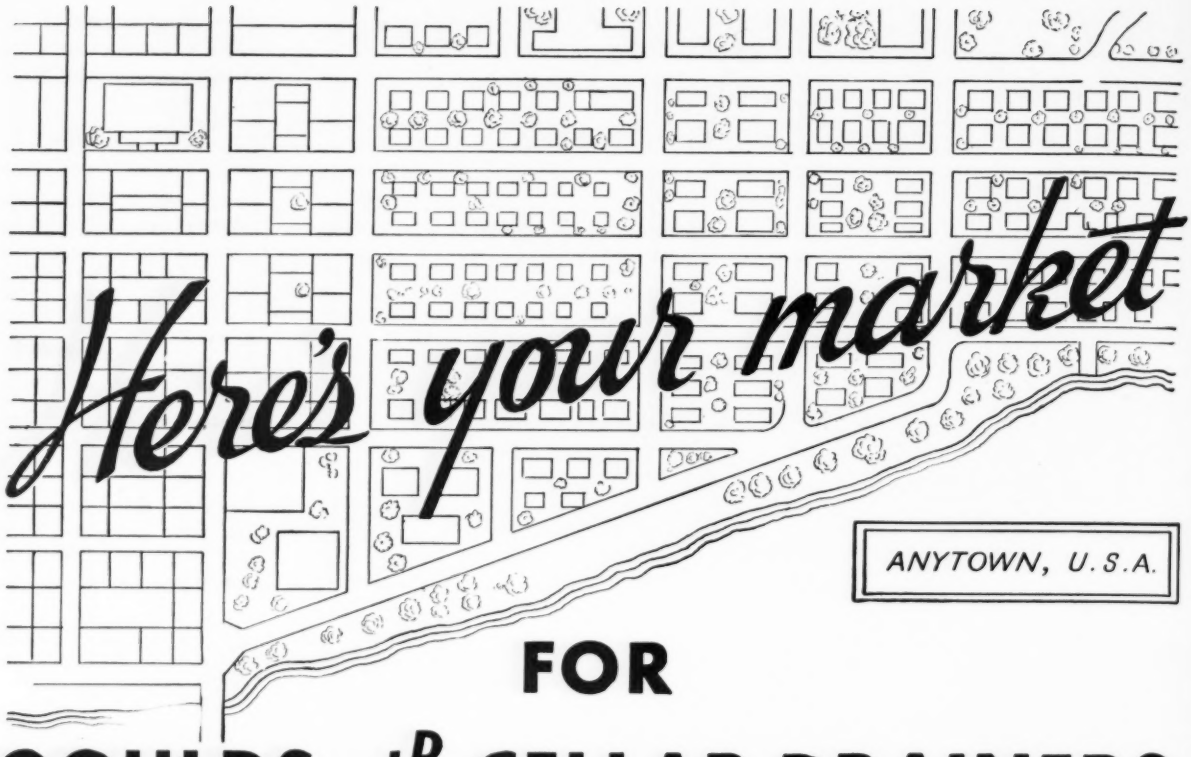


This is International Model CS-35, same rating and capacity, but engineered throughout for hardier service. This model has an International in-built 2-speed rear axle, doubling the transmission range, providing 8 forward and 2 reverse speeds for dual efficiency on hard highway and in roadless going. Here is POWER when you need it—SPEED when you want it.

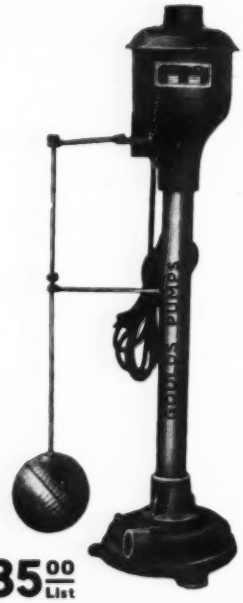
And this is International Model CS-35-T, a perfected six-wheel truck — International-built — *with a greatly increased carrying capacity.* If you want this trailing-axle six-wheeler without the 2-speed axle, ask for International Model C-35-T.



INTERNATIONAL TRUCKS



FOR GOULDS CID CELLAR DRAINERS



$35.00 List

Homes, business places and factories all suffer when there's too much water. Cellars flooded by fall rains and winter thaws mean ruined furnishings and stocks . . . are a definite health hazard. With memories of last spring still fresh, people are eager to buy flood protection. Will you get your share of this profitable business?

Goulds CID Cellar Drainers are low priced, compact and easily installed. No foundations necessary—simply set in sump, connect the discharge to the sewer or waste line, plug in the electric cord and the unit will operate automatically. Efficient design and careful manufacture assure years of trouble-free service—all parts in contact with water are made of bronze or stainless steel, eliminating rust and corrosion. Capacities up to 1900 G. P. H. handle all leakage and seepage, keep cellars dry at all times.

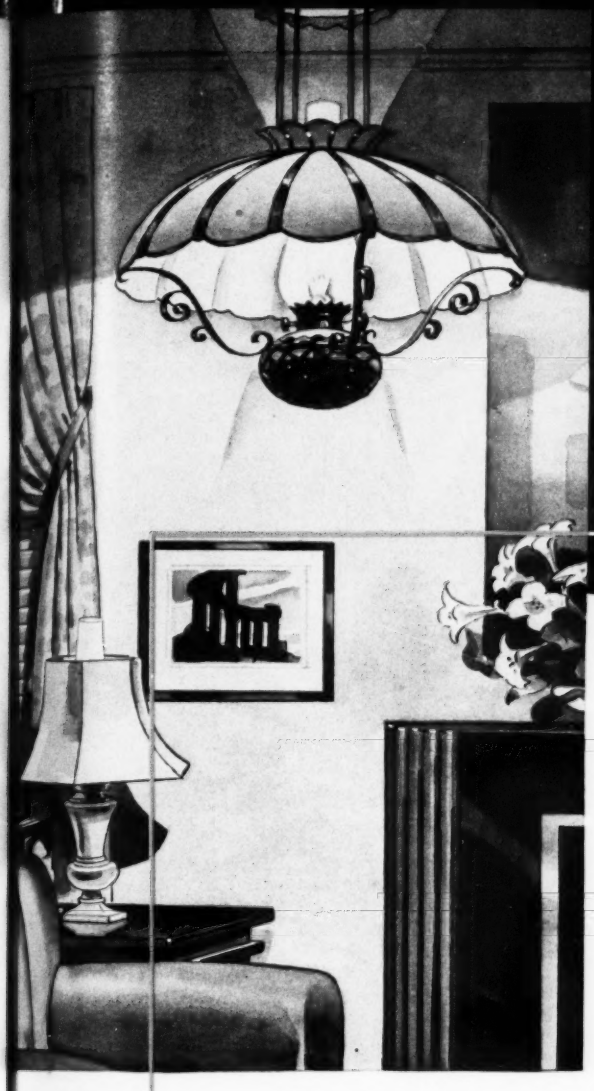
Goulds, leaders since 1848, manufacture pumps for every need.

GOULDS PUMPS, INC., 200 FALL ST., SENECA FALLS, N. Y.

GOULDS

RUNNING WATER

6389



Are you

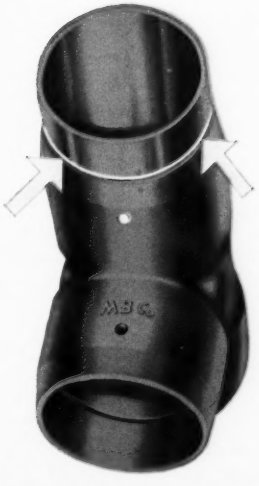
PUTTING 1900 PLUMBING FITTINGS IN YOUR 1936 PLUMBING JOBS?

● You wouldn't even consider lighting the modern building with kerosene lamps or candles—yet many plumbing materials still on the market are just as antiquated. During the last thirty years practically all materials for building purposes were vastly improved—but piping methods lagged woefully behind until the advent of STREAMLINE a few years ago.

STREAMLINE Fittings are as new and radical an improvement in piping methods as the most ultra modern materials or design used in present day construction.

STREAMLINE has no comebacks. Its joints remain permanently tight. It cannot rust or clog. It protects your name as a reliable plumbing contractor, who uses modern methods and materials.

INVESTIGATE



STREAMLINE has done more in maintaining the plumber in his rightful place in the minds of the public than any other product—his place as a first-class mechanic and not a handy man. STREAMLINE IS NOT FOR THE JACK-OF-ALL-TRADES, IT REQUIRES THE PLUMBER'S SKILL AND PLUMBER'S TOOLS TO INSTALL.

STREAMLINE Copper Pipe must not be confused with commercial copper pipe. It is a greatly improved pipe of uniform diameter and held to much closer tolerance. It is intended for use with the STREAMLINE Fitting—one is the perfect complement of the other.

STREAMLINE Fittings + STREAMLINE Copper Pipe + The Plumber's Skill = A Perfect Plumbing Installation

On your next copper job use STREAMLINE Fittings—insist on STREAMLINE Copper Pipe.

VISUAL PROOF

When the plumber or steamfitter makes a joint with a STREAMLINE Fitting and Copper Pipe he can tell at a glance that the joint is leak-proof and permanently tight, by the appearance of the solder as a complete ring at the end of the fitting. It is his visual evidence of work well done. This is a feature which no other solder type fitting possesses.

STREAMLINE
PIPE AND FITTINGS DIVISION
MUELLER BRASS CO.
PORT HURON, MICHIGAN

IT'S YOUR STORY

Why Not PUT IT TO WORK *for You?*

HERE is a series of promotional mailing pieces which is actually doing a job for many other plumbing and heating contractor-dealers, both in this country and abroad. It's a series which has definitely stimulated new and remodeling business for those who have used it . . . and it can do the same for YOU. It's a series which will enable you to do a HIGH CALIBER personalized merchandising job at exceptionally LOW COST.

But it will do MORE than that . . . it will help to establish YOUR shop as the LOGICAL, most DEPENDABLE source of supply for plumbing and heating products and services in your particular community. It's YOUR story, carefully and specifically designed to promote YOUR interests among YOUR customers and prospects . . . and that's exactly what it will do for you.

If you have followed this series as it has appeared in the pages of DOMESTIC ENGINEERING, you are no doubt quite familiar with the J. Brown Jones family which is featured in each story. You've seen how the Joneses have required the services of a competent plumbing and heating contractor to overcome their various predicaments and the selling methods and arguments used by the contractor. These stories have proven inspirational to the many who have followed them.

In these mailing pieces, three of which are reproduced above, the inspirational stories have been reprinted just as they appeared in DOMESTIC ENGINEERING. On the reverse side of each circular space is provided in which you may imprint or stamp the name and address of your establishment. Thus, each mailing is personalized.

Why not do as so many others have done . . . order a quantity of these circulars and send them to your best prospects. But do it SOON so that you may benefit at the earliest possible moment. Use the coupon when ordering.

ABOVE is shown three of the more recent mailing pieces in this series. The complete list of circulars are as follows:

1. HEATING COMFORT—For your automatic heating prospects. 2. PERSONALIZED PLUMBING — For remodeled bathroom prospects. 3. RUNNING WATER CONVENIENCE —For your automatic water system prospects. 4. LUXURIOUS HOT WATER—For your automatic water heating prospects. 5. PLUMBING WITH ASSURANCE—For your plumbing remodeling prospects in competition with d.t.u.'s. 6. SUMMER HEATING—For your heating plant cleaning prospects. 7. AIR CONDITIONING—For both your summer cooling and year round air conditioning prospects. 8. REFRESHING SHOWERS—Sells the idea of both replacement and new showers. These are available in any desired quantity at actual cost. One hundred of these will cost you, postpaid, only $1.00

SEND COUPON TODAY

DOMESTIC ENGINEERING, 1900 Prairie Ave., Chicago

Gentlemen: Please send me copies of J. Brown Jones circular entitled:

1 . . Heating Comfort
2 . . Personalized Plumbing
3 . . Running Water Convenience
4 . . Luxurious Hot Water
5 . . Plumbing with Assurance
6 . . Summer Heating
7 . . Air Conditioning
8 . . Refreshing Showers

for which I enclose $ ..... to cover.
[Indicate quantities desired before each title]

Name .....
Address .....
City ..... State .....

CHICAGO FAUCET NEWS

Issued Monthly by The Chicago Faucet Co., 2700-22 N. Crawford Ave., Chicago, Ill. Vol. 4, No. 11

All parts of Chicago Faucets subject to wear are incorporated in a standardized, removable, interchangeable operating unit and are as easily renewable as an electric light bulb.

MEET MOST DRASTIC CODE REQUIREMENTS
with this

New

HIGH BODY
Basin Faucet

No. 700, Quaturn, Metal Cross Handle

No. 730, Quaturn, Top Lever Handle

Better because safer

Here is a new basin faucet which embodies all of the features that have made Chicago Faucets famous for quality; and it is better, because it is safer. Its spout outlet is 1 3/8 inches above the lavatory slab. This meets the requirement of the most drastic code in force anywhere. All possibility of back-syphonage is banished with this new high body model.

Irrespective of the code specification in your city, or even if there is no code stipulation yet in force, this is the faucet to recommend. The absence of a code requirement does not render your customer immune from water contamination due to back-syphonage. He is subject to the same hazard which has induced drastic code regulation of spout heights in many communities. Give him certain safety with these new high body models. Order display samples now.

No. 732, Quaturn, China Cross Handle

No. 701, Klo-Self, Metal Cross Handle

No. 731, Klo-Self, Top Lever Handle

No. 733, Klo-Self, China Cross Handle

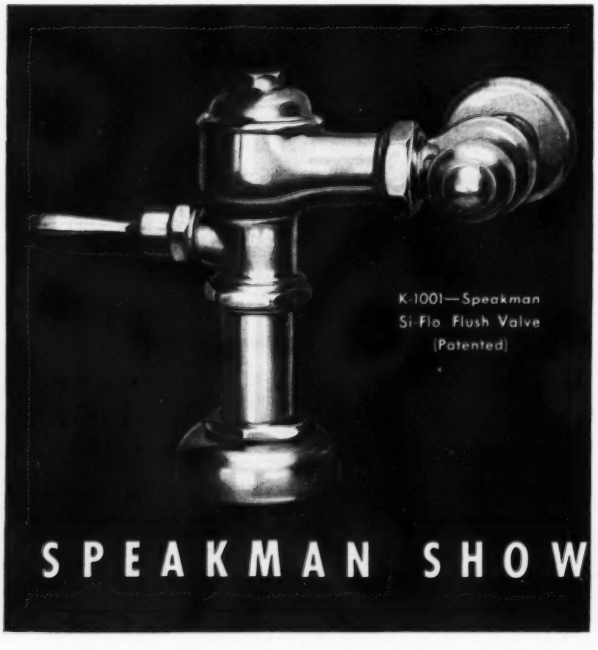
No. 333, Naiad Push Button (Self Closing)

SOME NOISES MUST BE ENDURED

...but noisy flush valves can be eliminated

The Speakman Si-Flo Flush Valve is so quiet in operation that it cannot be heard outside the bathroom. And this silent operation is combined with efficiency and long wearing qualities which make it ideal for installation in Hotels, Apartments, Clubs, Private Homes, Hospitals, Schools and Institutions.

Sturdy construction throughout and a sparkling chromium finish, typical of Speakman Products, is found in the Speakman Si-Flo Flush Valve. If repairs are ever required, the piston unit which comprises the entire operating mechanism of the valve can be replaced in a few minutes and a new one supplied at nominal cost. The Si-Flo Flush Valve can also be furnished with a positive back syphon preventer to meet the requirements of sanitary codes.



SPEAKMAN COMPANY
Wilmington · Delaware
Quality Fixtures Since 1869

SPEAKMAN SHOWERS & FIXTURES

● Prest-O-Lite air-acetylene torches are essential for the rapid installation of piping with solder-type fittings for refrigeration and air conditioning. The efficient and economical Prest-O-Lite air-acetylene flame is ready for use instantly. It is easily controlled and can be focused exactly where needed. It can be pointed like a pencil. This assures uniform heating without damaging adjacent materials. Thus Prest-O-Lite torches make possible work in completed buildings with a minimum of ripping, patching and refinishing... For further information see your jobber or write to the Linde Office near you.

THE LINDE AIR PRODUCTS COMPANY
Unit of Union Carbide and Carbon Corporation
UCC
New York and Principal Cities
In Canada:—Dominion Oxygen Co., Ltd., Toronto

PREST-O-LITE TORCHES

save time on refrigeration piping

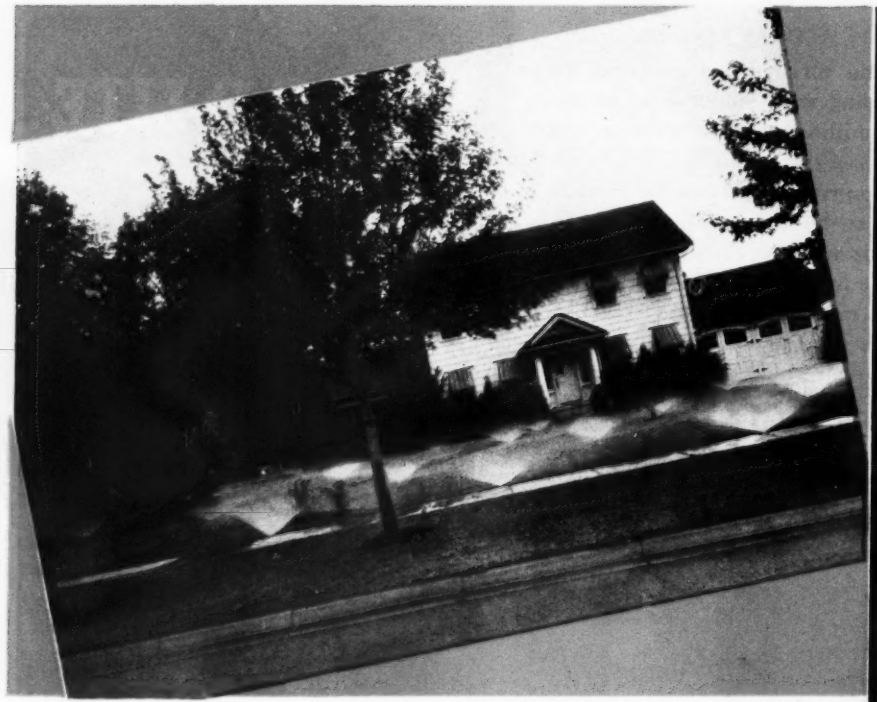
MC Tank 10 cu. ft.

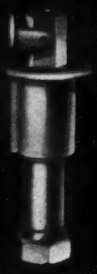
B Tank 40 cu. ft.

PREST-O-LITE GAS

Prest-O-Lite Gas, in these familiar cylinders, is readily available throughout the country from thousands of Prest-O-Lite Gas Exchange Service Stations.

PRODUCTS OF A UNIT OF UCC UNION CARBIDE AND CARBON CORPORATION





ACE SPRAY HEAD

Where adequate pressure and volume are available this head is used. Four capacities, with line, quarter, half and full circle discharge.

DUCE SPRAY HEAD

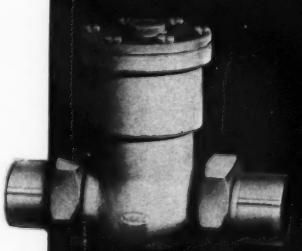
This stream-type head is made in two capacities, for smaller systems where lower pressure and volume of water must be utilized.

JACK SPRAY HEAD

Having no cover, this head is adapted for special use where climatic or other conditions permit. Four capacities are available, with varying discharge shapes.

LAWN VALVE

For remote control, either automatic or by hand, NIBCO Lawn Valves reduce the cost of piping and frequently permit more effective layouts.



DID YOU GET YOUR SHARE OF THIS EXTRA BUSINESS?

Last spring, NIBCO announced another extension of its line, offering unusual sales possibilities for plumbers who were seeking new ways to increase their business. Now, as the summer ends, those plumbers who took up NIBCO Lawn Spray Systems a few months ago and went to work on the proposition—are counting up the ***extra profits*** already produced.

And the season isn't over—the late fall business bears promise of being unusually good this year because of the severe dry summer so vividly remembered.

If you haven't secured information about NIBCO Lawn Spray Systems, you are overlooking a real opportunity. Ask your jobber, or ask us, how you can share in this expansion of the plumbing business. It won't cost you anything to find out.

NORTHERN INDIANA BRASS COMPANY

991 PLUM STREET ELKHART, INDIANA

NIBCO

NATIONALLY ADVERTISED

NIBCO advertising has been appearing regularly since early spring. Some of *your* prospects have undoubtedly seen and read these messages.

Packaged HEAT

HELPS SELL YOUR BURNER

What is this thing called *Packaged Heat? Packaged heat* is a new research and manufacturing service extended to oil burner manufacturers by NATIONAL AIR CONDITIONING INCORPORATED, newly formed subsidiary of NATIONAL RADIATOR CORPORATION, one of the world's largest manufacturers of boilers and radiation.

Through this service it is now possible to *unitize your* burners with famous National Radiator Corporation steel or cast iron boilers, *individually* engineered and clothed in jackets of striking originality created for you by our outstanding designers.

Eye appeal is sales appeal. Package your oil burner in a NATIONAL oil heating UNIT and increase your sales and profits. Increase your service to the home owner by delivering heat in *one* eye-filling, basement-glorifying package, complete, ready to connect to the heating system.

Three remarkworthy examples of Packaged Heat are the National-Williams Oil-O-Matic, Toridheet and Nu-Way units. Join the NATIONAL Parade—write for complete details of *Packaged Heat* today.

DEALERS—National Air Conditioning Incorporated, gives you an opportunity you have always wanted—a chance to sell customers and prospects twelve months in the year with 1. National Home Oil Heating Units (steel or cast iron), 2. National central system Air Conditioning Units for summer—winter—year 'round air conditioning, 3. National Summer Air Conditioners—portable units for filtering, cooling, dehumidifying, circulating and ventilating room air in shops, stores, offices and homes. Cash in on comfort 12 months of the year with National's big three.

NATIONAL-WILLIAMS OIL-O-MATIC (*left*), NU-WAY *and* TORIDHEET *oil heating units are* heat packaged *by* NATIONAL.

NATIONAL AIR CONDITIONING INCORPORATED

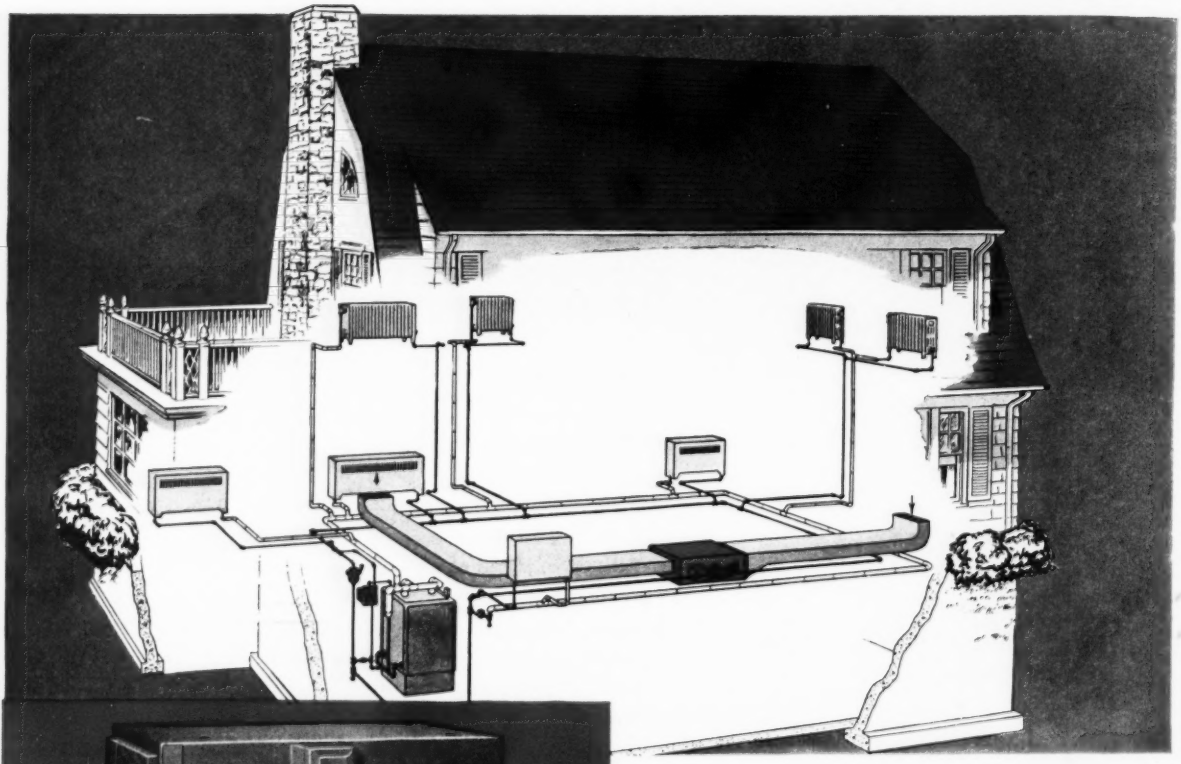
Division of NATIONAL RADIATOR CORPORATION

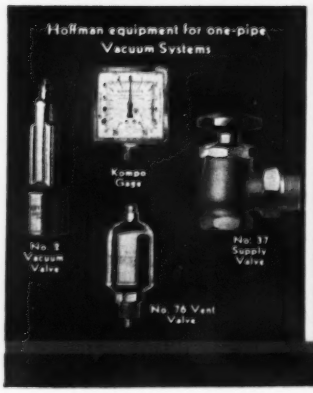
101 PARK AVENUE, NEW YORK, N. Y.

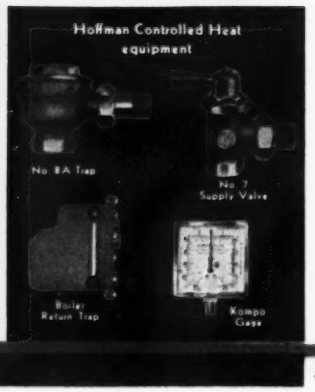
Baltimore · Boston · Buffalo · Chicago · Cincinnati · Cleveland · Johnstown · New York · Milwaukee · Philadelphia · Pittsburgh · Richmond · Washington

HOFFMAN *tells*

WHY AIR CONDITIONED







SPECIALLY DESIGNED FOR HOFFMAN CONTROLLED HEAT OR HOFFMAN VACUUM HEATING SYSTEMS . . .

Now modest home and pretentious residence alike can enjoy the benefits of air conditioning—*with radiator heat*—the only completely satisfactory heating method. The new Hoffman Air Conditioner, when installed with a simple one-pipe Hoffman Vacuum System or two-pipe Hoffman Controlled Heat affords comfort that satisfies the most modern conceptions. Either system supplies to the home both *adequate heat* and *fully conditioned air* during the heating season.

A minimum of duct work is required by a Hoffman Air Conditioning System . . . a minimum of labor and expense. The conditioning unit operates independently of the heating plant, so that fresh, cleaned and properly humidified air is delivered even if the heat supply is restricted or entirely shut off. Silent and dependable, the Hoffman Air Conditioner gears radiator heat to today's demand for air conditioning.

Hoffman Products include Traps, Venting Valves, Supply Valves,

home planners

RADIATOR HEAT IS BEST

IN A NATION WIDE PUBLICITY PROGRAM

The facts—*the real facts*—are all that is needed to guarantee Radiator Heat its rightful place in the plans of home builders and modernizers. Why it is the best foundation for true air conditioning . . . why it is cleanest . . . most dependable in any weather . . . and best able to provide genuine comfort . . .

This and other vital information Hoffman is presenting in a new advertising and sales promotion program. National publications that reach the choicest prospects in your own neighborhood are being used to show why only radiator heat can completely meet the highest modern standards of home comfort.

Hoffman National Advertising features a handsomely printed, 20 page book—free to all home planners who request it. Profusely illustrated, it explains in simple language the reasons why radiator heat is essential to air conditioning in its most satisfactory form. This book should be a powerful influence in assuring you your share of heating installations.

SEND FOR THIS BOOK

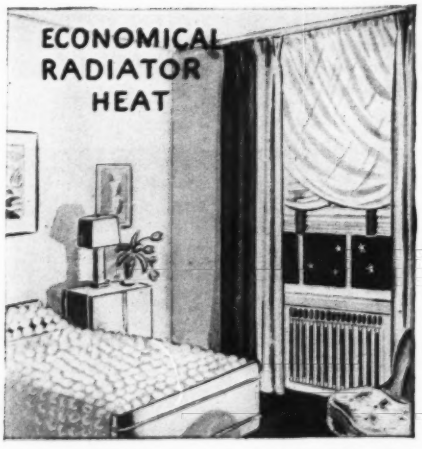
Every heating contractor should have a copy of this new Hoffman book. It offers a complete explanation of Air Conditioning and its relation to the heating system. A great help in selling radiator heat. Write today.

HOFFMAN
SPECIALTY CO., Inc.,
DEPT. RX-9
WATERBURY,
CONN.

Air Conditioners and Pumps...sold everywhere by leading wholesalers of Heating and Plumbing Equipment.

FITZGIBBONS

Boiler-Air Conditioner for "Split Systems"



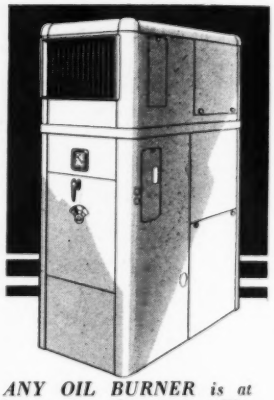
Right in line with the up-to-the-minute view of air conditioning, this versatile unit permits the placing of radiation of those rooms where it is undesirable or unnecessary to supply conditioned air. To all other rooms it will supply cleaned, tempered, humidified, circulated air in the volume desired.

In addition to all this, the Fitzgibbons Boiler-Air Conditioner supplies HOT WATER for kitchen, laundry and bath, ALL YEAR 'ROUND, with no tank or other equipment to mar the appearance of the basement recreation room.

In short, from a single compact and tastefully designed unit, you get CONDITIONED AIR, economical STEEL BOILER HEAT, and automatic, year-'round HOT WATER SUPPLY with no outside equipment. This unique combination of essential functions is proving of tremendous value in the establishing of air conditioning as a normal service in the modern American home.

•

Every oil burner dealer will want the complete story of this unit. Write us direct, or our representative near you for the new bulletin just off the press.



ANY OIL BURNER is at home in this unit. The jacket has not been enlarged a single inch to provide the required space. When desired, however, the burner can be placed outside the unit.

Every advantage affecting burner performance of the famous OIL-EIGHTY boiler has been retained in this unit.

•

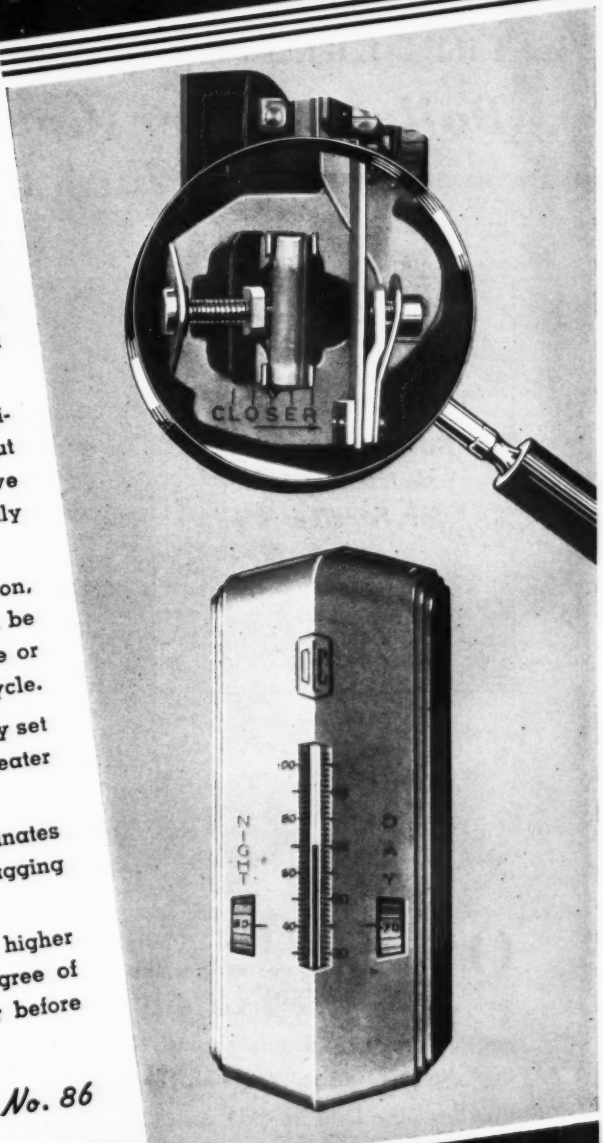
In addition to the unit pictured above, we can supply the FITZGIBBONSAIRE — an individual air conditioning floor unit for use in connection with a Fitzgibbons boiler.

Fitzgibbons Boiler Company, Inc.

GENERAL OFFICES:
ARCHITECTS BLDG., 101 PARK AVE., NEW YORK, N. Y.
Works: OSWEGO, N. Y.

BRANCHES AND REPRESENTATIVES IN PRINCIPAL CITIES

THE *two-eleven* SETS A HIGHER STANDARD OF PERFORMANCE



In developing the new "Genuine Detroit" Thermostat, the engineers have done an outstanding job . . . one in fact, that raises the accepted standards of thermostatic control. Taking the preheater element out of the "load" circuit and putting it in parallel with the "load" has revealed important advantages.

For instance, this change makes one thermostat universal for any load using a 20-25 volt circuit, without changes in assembly. Changes in "load" circuit have no effect on the preheater element and consequently no effect on the performance of the thermostat.

Accurate control for any type of building construction, any type of heating plant and any type of fuel can be secured by simply moving the preheater to increase or decrease the length and frequency of the heating cycle.

The air gap at the contacts can now be permanently set at the factory to respond best to the effect of the heater element. Thereafter it need not be changed.

Another seemingly simple engineering revision eliminates the possibility of the indoor temperature curve sagging in very cold weather.

All the above features combine to provide a new higher standard of performance . . . to accomplish a degree of precision in temperature regulation that has never before been available in a commercial thermostat.

Write for technical bulletin No. 86

DETROIT LUBRICATOR COMPANY DETROIT, MICH. U. S. A. 5900 Trumbull Avenue

NEW YORK, N. Y.—40 West 40th St. • CHICAGO, ILL.—816 S. Michigan Ave.
LOS ANGELES, CALIF.—320 Crocker Blvd.

DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

Canadian Representative—RAILWAY AND ENGINEERING SPECIALTIES LIMITED, Montreal, Toronto, Winnipeg

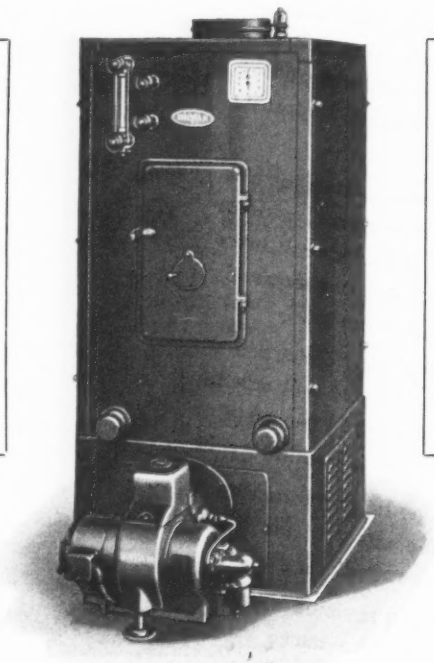
BRYAN

now announces

THE GREATEST IN NEW BOILER DESIGN

Boiler-Burner-Combustion Chamber Ready to Fire when Connected

New Sizes
☆
New Features
☆
Built Like a Battleship for Service
☆
Quiet Perfect Combustion

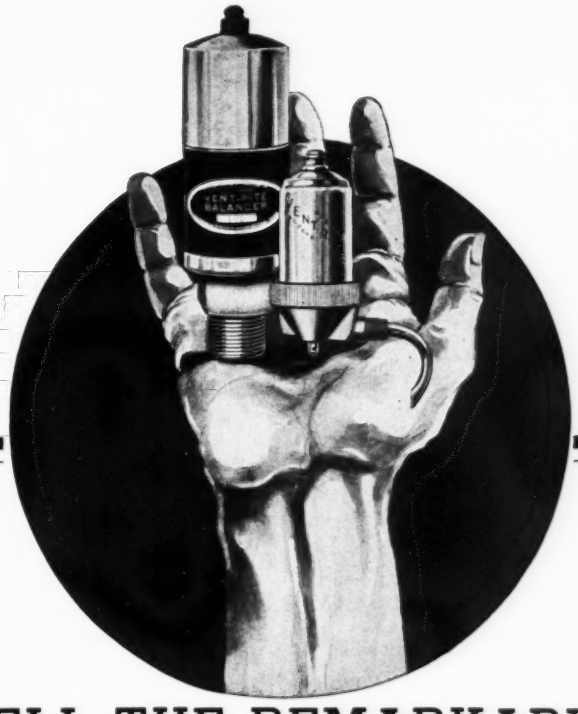


When you sell your customers a BRYAN Unit you give them absolutely the greatest in Fuel Economy
☆
More Compact in Size

OUR long experience as specialists in oil and gas burning equipment gives us that knowledge acquired only through specializing. No guessing at correct size or shape of fire box—it's built in and tested by us in each boiler-burner unit according to its rating demand. This insures you correct proportions for proper combustion and best results. Here is the original, especially designed copper tube boiler—so famous for its economy in fuel consumption—with all of its former good features retained with added points of "OPERATING VALUE." Boiler only is available for any standard Oil or Coal Burners.

BRYAN STEAM CORPORATION, Peru, Ind.

"SPECIALISTS IN STEAM PRODUCTS FOR HEAT AND POWER"



SELL THE REMARKABLE NEW PERFORMANCE of the VENT-VAC SYSTEM ON EVERY ONE-PIPE STEAM JOB

The Vent-Vac System raises One-Pipe Steam Heating to a new, high plane of Efficiency and Economy of Operation.

The System is Easily incorporated in old or new One-Pipe Steam Jobs by installing the Vent-Rite Balancer to operate in conjunction with Vent-Rite No. 2 Vacuum Valves.

The Vent-Vac System Positively Insures:

1. The controlled distribution of steam as it is generated, so that ALL RADIATORS ARE HEATED AT THE SAME TIME.
2. A further B.T.U. distribution, automatically controlled, TO ALL RADIATORS IN PROPORTION TO THEIR RESPECTIVE HEAT LOSSES.

The Vent-Vac System gives you a new and mighty important Sales Argument for installing One-Pipe Steam Heating because, you can guarantee Low Cost of Installation, with Positive Efficiency and Economy of operation.

Investigate the Vent-Vac System at once.
Write Today for Broadside, "Revolutionizing Steam Heating," Describing Installation and Performance.

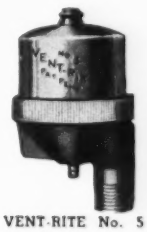
ANDERSON PRODUCTS
Incorporated
CAMBRIDGE, MASSACHUSETTS

VENT-RITE No. 1

VENT-RITE No. 2 I.V.S.

VENT-RITE No. 3

VENT-RITE No. 4 I.V.S.



VENT-RITE No. 5

VENT-RITE No. 6 I.V.S.

AIR-FLO No. 11

AIR-FLO No. 31

AIR-FLO No. 33

VENT-RITE RADIATOR AIR VALVES

VENT-RITE Valves with Wide Range Venting Control and Tamper Proof Adjustment Improve the Performance of Any One-Pipe Steam Job.

A Complete Line is Available for Every Venting Requirement. Standardize on VENT-RITES: They are favorably priced and backed by a Strict Sales Policy that Protects Your Profits.

VENT-RITE Air Valves and the VENT-RITE Balancer reach consumers through plumbing and heating contractors only. They are available to the trade through selected recognized wholesalers only, thereby the trade is protected at all times.

SCIENCE ALWAYS WINS!

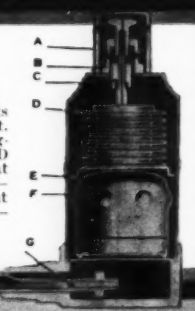
GIVE THEM all AN EQUAL BREAK

SLATER Dual Float Vacuum Regulator Valves are sold *only* through recognized wholesalers.

Above is the No. 1A SLATER Non-Vacuum Valve. At left is the No. 2A SLATER Vacuum Valve. Two of a complete line of radiator valves.

STUDY THESE SLATER FEATURES:

A — Vent Lock — Prevents Tampering with Adjustment. B—New Two Way Vent Regulator. C—Large Orifice. D—Upper Corrugated Float (Open to Atmosphere). E—Float Guide. F—Lower Float (Thermostatic Control). G—Adjustable Syphon.



EVERY radiator on the one-pipe steam heating system . . . no matter how remote from the heating plant . . . deserves an *equal* break. Unless they get it, true home heating satisfaction cannot possibly be attained.

In perfecting the SLATER Dual Float Vacuum Regulator Valve, *science* has lent assistance of incalculable worth to the engineers responsible for its creation. In the SLATER Valve *science* has made possible the one absolutely dependable means to *properly* equalized radiation . . . *throughout the system.* SLATER Valves give *all* the radiators an equal break, and as a consequence *every* room is equally comfortable. What is more, they substantially cut fuel costs.

A study of the cross section view shown at the left is well worth a moment or two of every heating man's time. It shows at a glance why more satisfactory performance may be expected from this *better* valve. When you specify SLATER Valves you not only give every radiator a break; you also give the customer a break he cannot possibly get from an ordinary valve. Give *yourself* a break . . . order SLATER Valves through your wholesaler today . . . or write direct for complete information.

SLATER MFG. & ENGINEERING CO.
230 CONGRESS ST., BOSTON, MASS.
SMITH & DALE, U. S. DISTRIBUTOR 457 STUART STREET **BOSTON, MASS.**

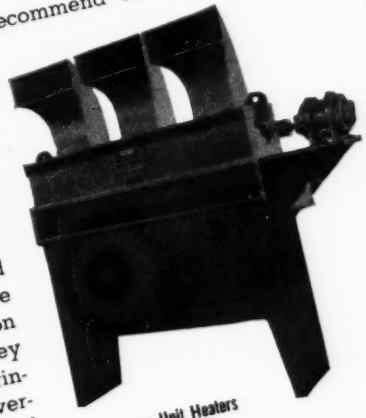
Slater
DUAL-FLOAT VACUUM REGULATOR VALVES

Take no chances when you sell and install UNIT HEATERS

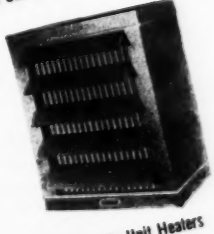
Sell American Blower UNIT HEATERS

You cannot afford to gamble on the products you sell. Every service interruption, every defect, every service call, means loss of time, considerable trouble and sometimes involves a loss of money. Don't take chances! Sell known quality—quality that will enable you to increase your volume and make a greater profit on your year's business.

You take no chance when you recommend and sell American Blower Unit Heaters. They're the result of 51 years' experience in the design and manufacture of heating, ventilating and air conditioning equipment. They're backed by American Blower—one of the world's best known manufacturers of heating equipment. They're time proved by over 100,000 units in service heating more than 300 million square feet of floor space. They are carried in stock in all principal cities, extensively advertised and universally recognized as the world's foremost Unit Heaters.



Sirocco Unit Heaters



Venturaire Unit Heaters

Cash in now! Bid your jobs on these quality units. Protect your own business! Insure your profit! Write for our new FREE sales and advertising plan. Get your share of the business from our great national advertising program. Mail the coupon below.

Send for the 1936 American Blower Unit Heater Program

FREE Direct Mail Helps

FREE Mailing Folders

FREE Envelop Stuffers

FREE Catalogs & Guides

FREE Factory Cooperation

MAIL THE COUPON

AMERICAN BLOWER CORPORATION

DETROIT, MICHIGAN

6000 RUSSELL STREET

SEND FOR OUR NEW SALES PLAN

Send FREE Program to

Name _____

Address _____ State _____

City _____

. . . . You can always depend on Your J & L Pipe Distributor

I'm an old timer in this business. I've bought a lot of pipe from a lot of sources. And out of it all I've learned one thing—that the surest way to save time, trouble and money is to depend on my J & L pipe distributor for all my pipe requirements. He knows good pipe—he represents a pipe manufacturer with an outstanding reputation for quality, he carries complete stocks and he gives me the kind of prompt, intelligent service that makes money for me.

Take it from one who knows, you can always depend on your J & L pipe distributor.

J&L PIPE

JONES & LAUGHLIN STEEL CORPORATION
AMERICAN IRON AND STEEL WORKS
PITTSBURGH, PENNSYLVANIA

J&L STEEL

Burnham Cosy Comfort Heat

WHY LOSE MONEY Dividing Yourself Up Into Little Pieces?

You promptly ask what do we mean by little pieces? Pieces of *what*, and *when?* Little pieces of *here* and *there* business. That's what we mean.

LET'S take an example: You have a house heating job. You buy the boiler from A. X. & Co. The radiators from B. T. & Co. The valves from V. W. & Co. And so on down the line. A half dozen concerns' products on the one job.

If you don't stock them all, then that means you, or someone in the office, must send out six letters. Coming from six different shipping points, someone must keep a check on their arrival, or write, 'phone or wire about those that don't. Six bills are received, all of which have to be checked. Six checks to make out. Six bookkeeping entries to be made.

But that isn't all. Not by a jugful. When you start the job, more often than not some of the six things don't work well together. Don't, because none of them were especially designed to work together. And so it goes.

So let us ask you: Why divide yourself up into all those six pieces when you can get the complete Burnham equipment for the entire job from one source of supply? You then, with the one order, put all the responsibility on the one distributor or jobber. You cut out five needless time-taking, cost-making operations.

You deal with one concern whose men you know, and who know you, and give their *personal attention* to your needs. You get Burnham equipment that fits together all along the line. Products that are well known, and have an outstanding reputation for dependableness.

But don't mistake us. Of course, we are always glad of your small orders. Glad to be one of your six pieces, so to speak. But do you mind giving that one-piece proposition a little thought? It might be a smart thing to do.

Burnham Boiler Corporation

IRVINGTON, NEW YORK ZANESVILLE, OHIO

Representatives in All Principal Cities of the United States and Canada

Like a FOUR STAR FINAL ☆☆☆☆

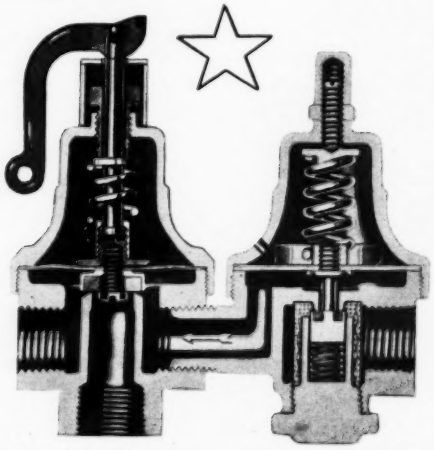
WATTS *Gives you the Latest!*

No. 94 Low Water Cut-off

Compact, efficient, a novel type of low water cut-off design. Simple to install; positive in action; profitable to handle. A quality engineered, quality built unit with a price appeal. A STANDOUT IN TODAY'S MARKET.

Learn to depend upon WATTS leadership, WATTS quality, WATTS service. No other ONE manufacturer in the world offers you so complete a line. Build your business around WATTS . . . around the SERVICE of WATTS SKILLFULLY ENGINEERED UNITS.

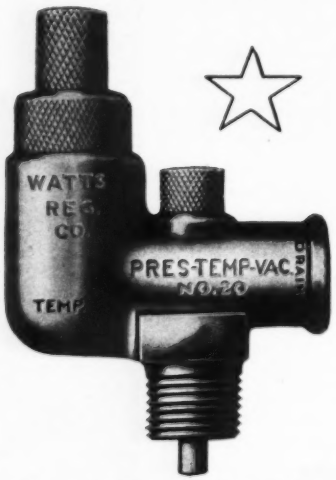
With WATTS PROTECTIVE DEVICES, carry your business to a new level and your profits to a new high.



No. 450 Hot Water Heating Unit

Built of composition BRONZE and other high grade materials. The lowest priced, quality unit, on the market.

Completely efficient; built to Watts Standards.



NO. 20 PRES-TEM-VAC

Pressure, Temperature and Vacuum Relief Valve. Semi-automatic. Completely accessible.

AND . . .

. . . the largest, most complete, line of Feeders; Low Water Cut-offs; Reducing Valves; Pressure, Temperature and Vacuum Relief Valves and Water Circulators, in the world.

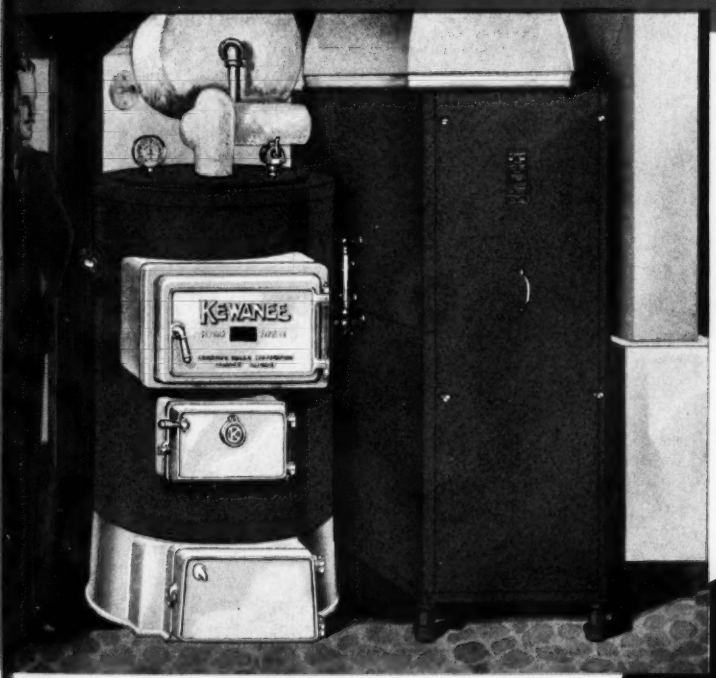
WATTS REGULATOR CO.
Lawrence, Mass.

Canadian Agents: Cunningham & Hill, Ltd., Toronto
Representatives in Principal Cities of the World

DEPENDABLE HEAT *Plus* YEAR 'ROUND HOT WATER

Plus Conditioned Air *with*

KEWANEE BOILER AND CONDITIONER



Typical Set-up of a Kewanee Air Conditioning Installation Kewanee Round Boiler Type "R", with Copper Coil for Domestic Hot Water and Kewanee Conditioner Type RK.

The Kewanee RK Conditioner is built in 3 sizes to Condition 13,000 cubic feet space and larger . . . capacity 400 to 700 feet of equivalent direct radiation . . . 103,000 to 180,000 Btu. per hour. Cooling and de-humidifying equipment can be added any time.

Homes and small buildings may now enjoy all the advantages of Conditioned Air plus Dependable Heat and Year'round Hot Water through these sturdy, tested products built with all that engineering genius, manufacturing skill and experience which for 68 years has characterized all Kewanee products.

Designed, engineered and built for conditioning spaces as small as 13,000 cubic feet, the Kewanee RK Conditioner, hooked up to a Kewanee Boiler brings to homes the Acme of Comfort at the Minimum of Cost.

1. **WARMS THE AIR** automatically and
2. **HUMIDIFIES IT** simultaneously
3. **FILTERS THE AIR** continuously &
4. **CIRCULATES IT** positively yet quietly
5. **VENTILATES THE HOME,** without draft

Never forget that regardless of the size of the building, or the fuel used, the Success of every Heating and Air Conditioning Plant Depends Primarily on the Boiler.

The Design and Construction of Kewanee Boilers and Conditioners is the result of expert collaboration of skill and 50 years experience of the largest organization in the industry.

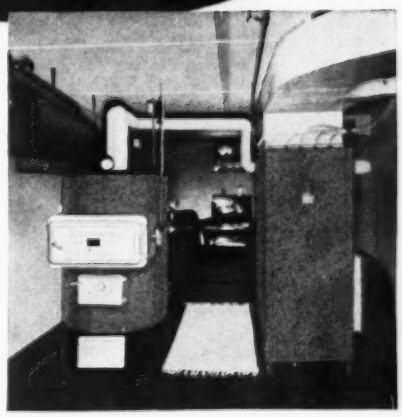
Ask for Circular RK-92

KEWANEE BOILER CORPORATION

KEWANEE, ILLINOIS

Branches in 61 Cities: Eastern District Office, 37 W. 39th St., New York City

division American Radiator and Standard Sanitary Corporation



Basement of KEWANEE Air Conditioned Residence, 13,000 cu. ft. content. No. 1736 Round "R" Boiler. No. 500 Kewanee Conditioner.

STOP HERE!

FOR THE MOST COMPLETE LINE OF HOT WATER SPECIALTIES

B & G BOOSTER
B & G INDIRECT HEATERS
B & G FLO-CONTROL VALVE
B & G TANKLESS HEATER
B & G MONOFLO FITTING
B & G ORIFLO FITTING
D & T SIMPLEX RELIEF VALVE
D & T "No. 500" SELF-FILLING RELIEF VALVE
B & G THERMOCHEK
D & T COMPRESSION TANK
B & G MOTORIZED VALVE
B & G THERMOFLO

B&G

SEND FOR THIS CATALOG

Gives complete descriptions, installation diagrams and engineering data for all B & G Hot Water Heating Systems and Specialties, including the B & G Six Step Manual for designing modern hot water systems.

BELL & GOSSETT CO.

3000 Wallace St., Chicago

Canadian Licensee: S. A. Armstrong, Ltd.
720 Bathurst St., Toronto

To the Contractor

LOOKING FOR A HEATING SYSTEM WITH A DIFFERENCE

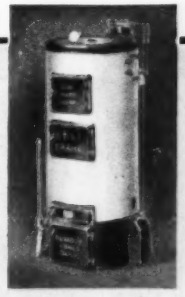
● Crane Boilers — with scores of refinements in design and manufacture—have three outstanding points of superiority. They can be erected in much less time than the ordinary boiler. They have 50 per cent more horizontal "Ceiling" heating surface over the hot gases than ordinary boilers. And patented baffles direct the water across the hottest points.

Quick and easy erection saves time and labor, assures you time and opportunity to make an extra tight job of it. High efficiency reduces your customer's fuel bills, heats every corner of his house. You win . . . and your customer wins . . . when you install a Crane Boiler.

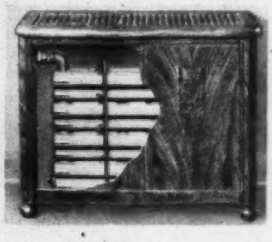
Completing a Crane Heating System with Crane Directed Radiation—the most advanced idea in radiator heat in years—and with Crane Humidifying Radiators—adequate capacity with negligible operating cost—results in a quality job, the long life and efficient operation of which make the most economical heating system to install and to own.

The Crane line is adequate for every residential job. Build your business on Crane Heating Systems . . . and you build profits, volume, and a reputation for sound, efficient installations. Write for full particulars on the Crane line.

The Crane Finance Plan enables your customers to modernize with no money down, three years to pay.

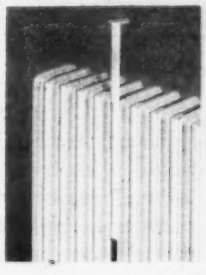


Crane Round Boiler for Coal Burning —the boiler with 24 radical improvements which result in substantial economies and great ease of tending. Readily adapted to oil burning.



Humidifying Radiator Large evaporating capacity in small space. Cabinet enclosure. Easily, quickly installed, replacing ordinary radiation. Practically no operating cost.

S O & W O Sectional Boiler for automatic firing. The SO & WO has super-efficient extended ceiling surface. For oil burner or stoker.



Directed Radiation. Invisible shields direct heat outwardly into room, minimizing ceiling-floor temperature difference, protecting walls, etc. from smudge.

CRANE

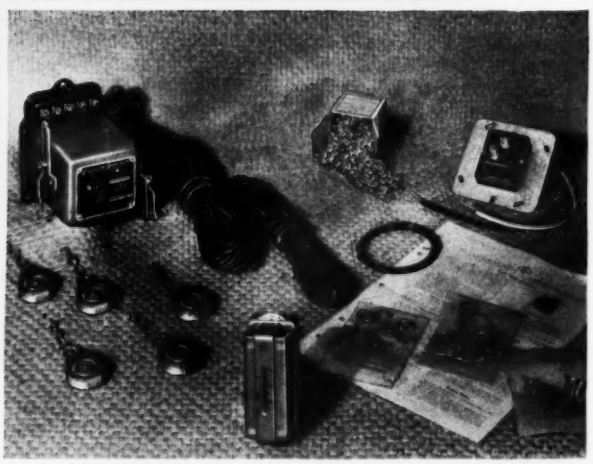
CRANE CO., GENERAL OFFICES: 836 SOUTH MICHIGAN AVENUE, CHICAGO, ILL. • NEW YORK: 23 W. 44TH STREET

Branches and Sales Offices in One Hundred and Sixty Cities

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

A DEPENDABLE Damper Regulator Package in the LOW PRICED Field

The ELECTRIC JANITOR



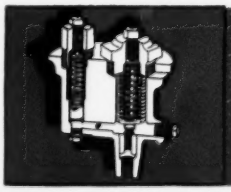
THE standard Minneapolis-Honeywell Electric Janitor meets the demand for a damper regulator package in the low priced field. Included in this package is the heat leveling thermostat, a sturdy, efficient and dependable electric damper control motor, transformer and all necessary wiring and fittings. Despite its low price, the Electric Janitor package is representative of Minneapolis-Honeywell quality throughout. Other Minneapolis-Honeywell packages are available to meet the needs of every type of warm air installation. Minneapolis-Honeywell Regulator Co., 2801 4th Ave. So., Minneapolis, Minn. Branch and distributing offices in all principal cities. In Canada: Minneapolis-Honeywell Regulator Co., Ltd., 117 Peter Street, Toronto. European sales and services: N. V. Nederlandsche Minneapolis-Honeywell, Wijdesteeg 4, Amsterdam – C, Holland.

MINNEAPOLIS HONEYWELL

Control Systems

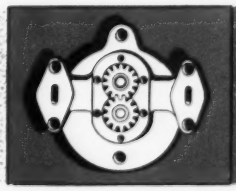
BROWN INSTRUMENTS FOR INDICATING, RECORDING, CONTROLLING

DEFINITE FEATURES OF SUPERIORITY



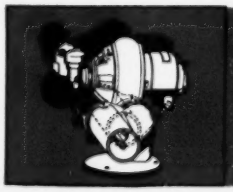
SEPARATE SHUT-OFF VALVE

Operates independently of Pressure Regulating Valve—an exclusive Wayne safety feature. Oil supply cuts off at 50 lbs.



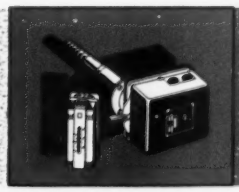
SILENT, EFFICIENT PUMP

Coupled directly to motor shaft. Pumps oil five times faster than needed—assures full oil lines at all times. A 50% safety factor.



MOVABLE COMBUSTION TUBE

Dotted lines show how Firing Head may be raised or lowered for proper nozzle height without moving burner or pedestal.



MINNEAPOLIS-HONEYWELL CONTROLS

The finest low-voltage controls for intermittent ignition ever developed. Relay panel "double checks" burner operation.

ASK FOR BULLETIN

WAYNE MISTOIL BURNER

WAYNE OIL BURNER CORPORATION

FORT WAYNE, INDIANA

Eastern Offices and Warehouse: 63 Flatbush Ave. Ext., Brooklyn, N. Y.

DOLE
Dole
DOLE No. 1 Air Valve is for balancing one-pipe steam heating systems. Dole Vari-Vent feature enables definite control of radiator venting — Straight Line Control — any venting speed required between virtually closed and wide open. Especially efficient when used on oil, gas or stoker fired systems. Does not "stick." Does not spit water. Easily installed on any cast iron radiator. Fully guaranteed for one year.
Use either Dole Nos. 4 or 5 Quick Vent Valves for venting the basement mains.
VARI VENT No.1
AIR VALVE
DOLE
Dole
DOLE No. 1 Air Valve is for venting radiators of one or two pipe gravity steam heating systems. Easily installed on any cast iron radiator. Extra large venting port insures quicker heating. Long syphon tube enables proper drainage of valve. No "sticking." Float construction prevents spitting of water. Fully guaranteed for one year.
Use either Dole Nos. 4 or 5 Quick Vent Valves for venting the basement mains.
Manufactured by
THE DOLE VALVE COMPANY
No.1
AIR VALVE
DOLE
Dole
DOLE No. 3 A Air Valve is specially designed for venting convection (either copper or cast iron) and unit heaters of one or two pipe gravity steam heating systems. Also satisfactory for venting pipe coils, drop risers or small mains. Positively will not "stick" or spit water. Connecting stem size, ⅛" I.P.T. If nipple connection is necessary use one not less than ¾" I.P.T. Fully guaranteed for one year.
Use either Dole Nos. 4 or 5 for venting large basement mains.
No.3A
AIR VALVE
DOLE
Dole
DOLE No. 3 C Air Valve is an all-purpose straight shank. Equally efficient for venting drop risers, pipe coils, steam mains and unit heaters of one- or two-pipe gravity steam systems. Positively will not "stick" or spit water. Connecting stem size ¾" I.P.T. male, ⅛" I.P.T. female. Nipple connection only necessary on unit heater installations. Use nipple not less than ¾" I.P.T. Fully guaranteed for one year.
Manufactured by
THE DOLE VALVE COMPANY
No.3C
AIR VALVE
THE RED DOT DENOTES VACUUM VALVE
DOLE
Announcing the new line of Dole Air and Vacuum Valves
The red dot denotes vacuum valve

specially designed for balancing and "vacuumizing" cast iron or copper convection heaters of one-pipe steam heating systems. *Positively* will not "stick" or spit water. Dole Vari-Vent feature permits equalized distribution of steam. Gives quicker and longer heating from less fuel. Especially efficient when used on oil, gas or stoker fired systems. Connecting stem size ⅛" I.P.T. Nipple connection not necessary. Fully guaranteed for one year.

VARI VENT No.101

VACUUM VALVE

DOLE No. 6 B Vacuum Valve is a straight shank valve for venting the mains of "vacuumized" one-pipe steam systems. Dole bellows-operated vacuum seal prevents the return of air after the mains have been vented. Gives quicker and longer heating from less fuel. Connecting stem size, ¾" I.P.T. male, ⅜" I.P.T. female. Nipple connection not necessary. If nipple simplifies installation, use one of at least ⅜" I. P.T. Fully guaranteed for one year.

Use Dole No. 2 B Vacuum Valves or Dole Vari-Vent No. 2 B Vacuum Valves on each radiator.

No.6B

VACUUM VALVE

Manufactured by
THE DOLE VALVE COMPANY

Dole

DOLE No. 2 B Vacuum Valve is for venting the radiators and "vacuumizing" one-pipe steam systems. Prevents the return of air after it has been once expelled. Gives quicker and longer heating from less fuel. Easily installed on any cast iron radiator. Fully guaranteed for one year.

To get full benefit install one Dole No. 2 B Vacuum Valve on each radiator and a Dole No. 6 B Vacuum Valve on the end of each steam main.

Manufactured by
THE DOLE VALVE COMPANY
1901-1941 Carroll Avenue
Chicago, Illinois, U. S. A.
Patent No. 1909413

THE RED DOT DENOTES VACUUM VALVE

DOLE

No.2B

VACUUM VALVE

THE RED DOT DENOTES VACUUM VALVE

DOLE

VARI VENT No.2B

VACUUM VALVE

Dole

DOLE VARI-VENT No. 2 B Vacuum Valve is for *balancing* as well as "vacuumizing" one-pipe steam systems. Dole Vari-Vent feature permits definite control of radiator venting—*Straight Line Control*—any venting speed required from virtually closed to wide open. Gives quicker and longer heating from less fuel. Especially efficient when used on oil, gas or stoker fired systems. Easily installed on any cast iron radiator. Fully guaranteed for one year.

To get full benefit install a Dole No. 2 B Vari-Vent Valve on each radiator and a Dole No. 6 B Vacuum Valve on the end of each steam main.

Manufactured by
THE DOLE VALVE COMPANY
1901-1941 Carroll Avenue
Chicago, Illinois, U. S. A.
Patent No. 1909413 and Pats. Pend.

Whatever YOUR WATER SYSTEM PROBLEM

There's a Dependable MYERS WATER SYSTEM TO SOLVE IT

Water system business looks exceptionally good for Myers dealers this Fall. Everywhere country and suburban homes and farms (rural electrification) will be modernized with running water before cold weather sets in. Plan your drive now to get your share of this business. Display Myers Water Systems in your store and at your local fair. Personally contact and get your story of Myers Quality, Performance and Favorable Prices to every prospect in your trade area remembering that there is a dependable Myers for any installation up to ten thousand gallons of water per hour.

Be ready for this business. Place your order with us today for your complete Fall and Early Winter requirements and profit accordingly. Inquiries receive prompt attention. Catalog and complete information on request.

THE F. E. MYERS & BRO. CO.
ASHLAND OHIO

FIG. 2631

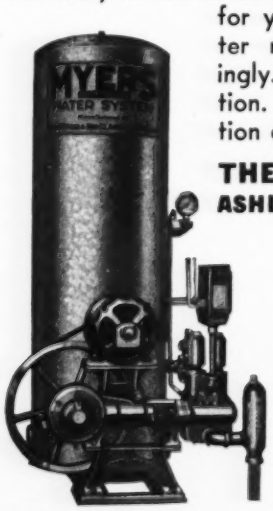


FIG. 2510

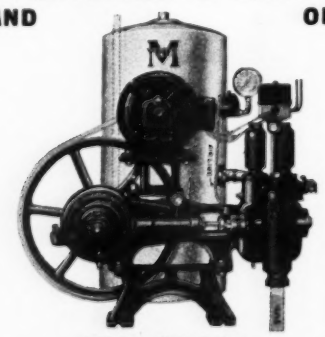


FIG. 2739

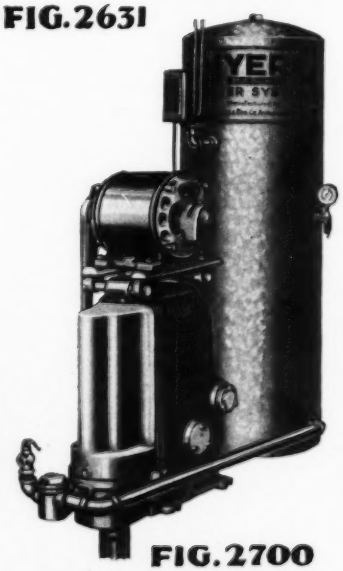


FIG. 2700

PUMPS – WATER SYSTEMS – HAY TOOLS – DOOR HANGERS

ARCO presents the PERFECT VENTING SYSTEM

No. 861 FOR STEAM — No. 862 FOR VACUUM

ARCO HURIVENT

a full half inch port vents main lines in a hurry, without leaking

No. 5000 FOR STEAM — No. 5150 FOR VACUUM

IDEAL VARIPORT

adjustable air valve for radiators, with wide range of venting rates

BETTER HOUSING PROGRAM

TURN automatic heating into automatic comfort. Don't impair the effectiveness of your one pipe system by making it fight air pressure in the mains, risers and radiators. Here is the perfect venting system. It gives you absolute control over venting, permits every radiator in the house to get equal heat in a hurry.

On the mains, install the new Arco Hurivent. It has fast venting capacity — a full half inch port. Yet its unique construction prevents steam or water leaking through. It is dry and noiseless; fast in operation; makes the main practically part of the boiler header.

Then on each radiator, put an Ideal Variport. With one simple adjustment you control the venting rate and the amount of heat that each radiator receives. The removable cap — an exclusive feature — protects the adjustment from tampering. Thus you can actually distribute steam to distant rooms so that every room gets equal steam and equal comfort . . . and *balanced heating* with intermittent firing is a reality!

Remember . . . every time you install a one pipe job for automatic heating, the best way to assure quick heat to the house is with the Arco Hurivent and the Ideal Variport in combination. Ask your jobber for the facts. Or write today to

ACCESSORIES DIVISION
AMERICAN RADIATOR COMPANY
DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION
40 West 40th Street, New York, N. Y.

Arco Accessories

ARE USED AS PART OF

AMERICAN RADIATOR CONDITIONING SYSTEMS

Write for new catalog 236

MORE MODINES ARE SOLD THAN ANY OTHER UNIT HEATER

● This year... as in previous years... Modine Unit Heaters are easily maintaining their leadership. And for the same reasons. Modines are still the best buy in unit heaters. They do a better, faster and more even job of heating... cost far less to install... are more economical to operate... and they're better looking units, too.

Because Modines are a better buy... they are easier for you to sell. One Modine job sells another. And you have the expert sales and engineering assistance of Modine field representatives, trained in all phases of heating and ventilating. Modines are more profitable to sell because Modine performance keeps them sold... trouble calls and servicing don't eat up your profits.

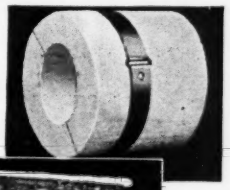
Backed by the extensive facilities, equipment, experience and organization of a pioneer manufacturer of unit heaters, with a financial rating of over a million dollars, Modine Unit Heaters will continue to lead the field.

MODINE MANUFACTURING COMPANY 1204 17th ST. **RACINE, WIS.**

HEATING, COOLING AND AIR CONDITIONING EQUIPMENT FOR COMMERCIAL, INDUSTRIAL AND DOMESTIC APPLICATION

Don't miss this NEW J-M Talking Picture..IT TELLS

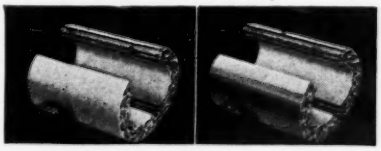
These J-M Insulations Increase Your Profits on every job



J-M 85% Magnesia. Highest insulating value. Neat appearance. Permanent. Costs more, but worth more. And a handsome profit for you.

J-M Asbestocel Range Boiler Jacket saves enough fuel in a few months to pay for itself. A sales story that lands many an extra $6 to $8 a job.

J-M New Pre-Shrunk Wool Felt. Furnished either with a canvas or with a handsome aluminum finish that ends pasting, saves ⅓ on labor.

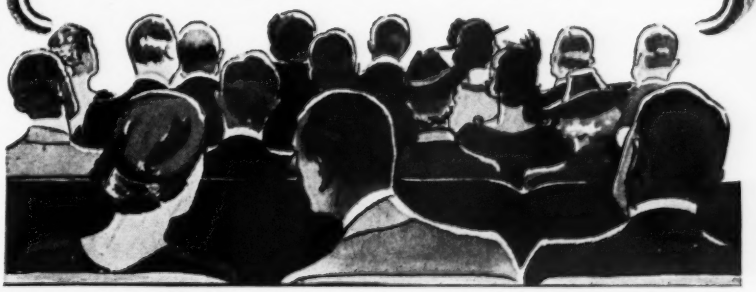


J-M Pre-Shrunk Asbestocel with new non-canvas finishes saves ⅓ labor cost. (Asbestos Paper Finish; also Aluminum Finish for de luxe jobs.)

AND HERE'S THE NEW BOOK!

The J-M Movie tells you how this book puts over the idea of new construction. Learn how it can help you do a real selling job . . . and one that's mighty profitable for you! Be sure to see the J-M Talking Picture and get your free copies of "I Am Your Master Plumber," imprinted with your name and address.

HOW TO GET MORE BUSINESS in the New-House Market!



It should be seen by every plumbing and heating contractor interested in taking advantage of the building boom ahead . . .

A FULL-LENGTH, dramatic movie that covers the whole subject of home construction, from financing right through completion! That's something worth seeing!

You have an important part in this logical, hard-hitting drive for new construction . . . and this picture shows you how to cash in on the greatest opportunity plumbing and heating contractors have had in the last six years!

Of course, the new picture is only part of our plan. There's a new book, too . . . shown at the left . . . it's also designed to help you do the kind of a selling job that means big returns for you. Send the coupon today for full details of our new plan. Johns-Manville, 22 E. 40th St., N. Y. C.

ASK YOUR SUPPLY HOUSE WHEN THE J-M PICTURE WILL BE SHOWN IN YOUR CITY

Johns-Manville

LOW-PRESSURE INSULATIONS

Sold Only by the Leading Supply Houses

JOHNS-MANVILLE
22 East 40th Street, New York

Please send me details on your new plan and also the name of my nearest J-M Jobber.

Name_____

Address_____

City_____ State_____

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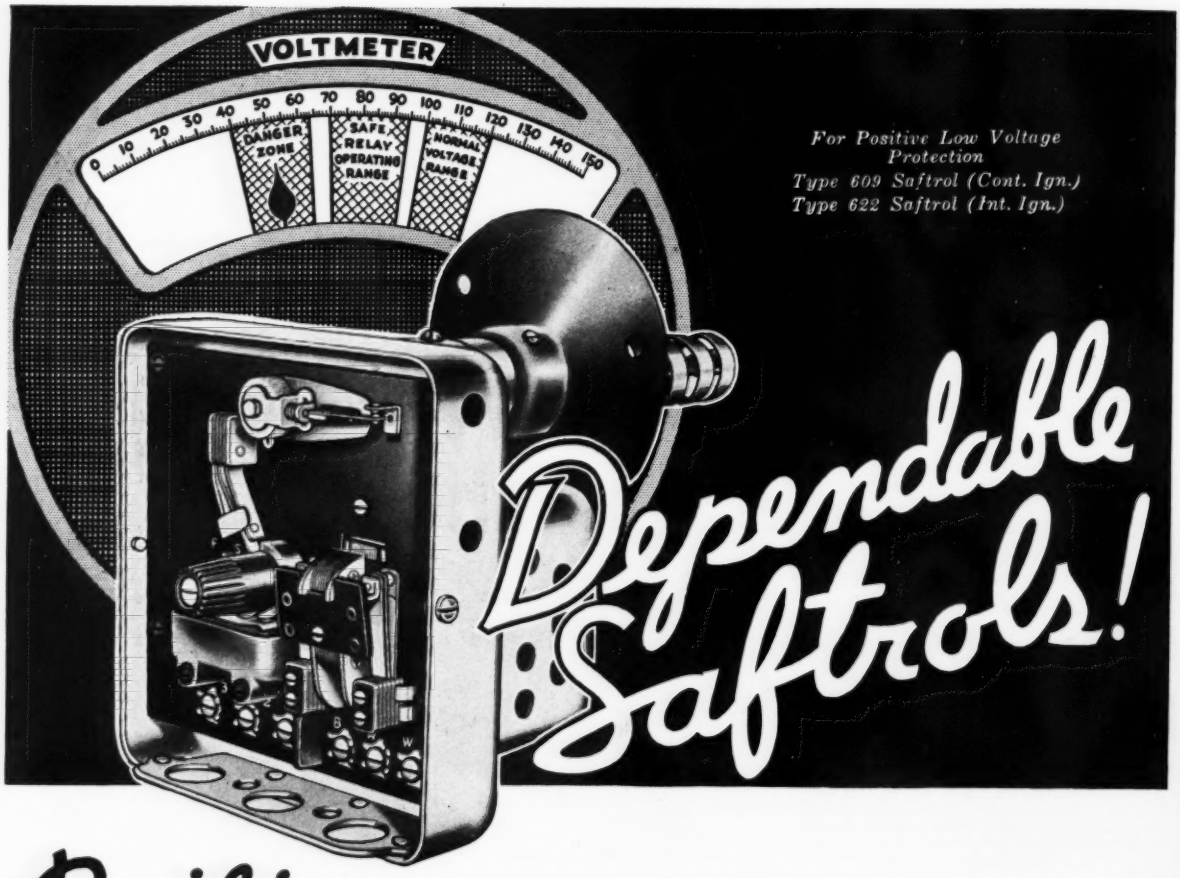
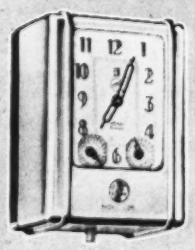


For Positive Low Voltage Protection
Type 609 Saftrol (Cont. Ign.)
Type 622 Saftrol (Int. Ign.)

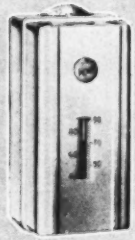
Dependable Saftrols!

Positive LOW VOLTAGE PROTECTION

Another way of saying
"FEWER SERVICE CALLS"



Penn Tem-Clock for inexpensive fully automatic night set-back



New Penn Imperial Day-Nite Temtrol

Dig up the facts yourself! Other automatic heating manufacturers and dealers have. Here's what they say:—"Penn Saftrols are simple." "Easier to install." "'Tops' in dependability." Then, too, an unbiased survey ranks Penn Saftrols "at the top of the heap" in low service costs. That's the record of the Types 607 and 620.

Now, these same tried and proved Saftrols are available with still another service-saving feature . . . *positive low voltage protection.* (Types 609 and 622). No more unexplainable puffs which too frequently resulted from momentary or prolonged low voltage on the supply lines. The motor operated. Voltages were too low for ignition. A mist formed. Then the voltage returned to normal . . . a spark . . . and puff!

Under such low voltage conditions, these new Types 609 and 622 Saftrols provide positive shut-down *before* voltage drops dangerously low, and automatically restart the burner when voltage is again high enough for proper ignition.

Compare Penn Saftrols for dependability, simplicity, ease of handling. Ask those who have used them. Then you'll always specify Penn Saftrols on every job.

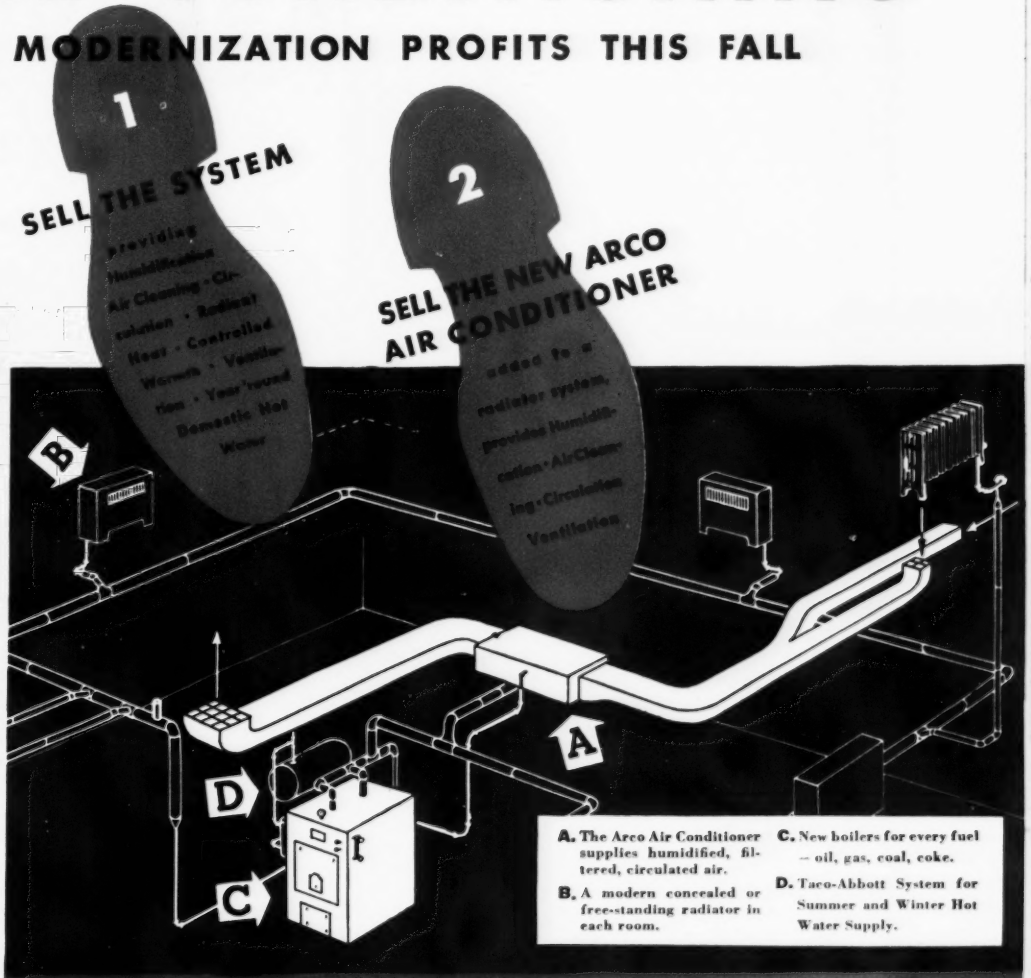
PENN ELECTRIC SWITCH CO.
DES MOINES, IOWA
OFFICES: New York Boston Detroit Chicago
EXPORT: New York DISTRIBUTORS in all principal cities.
REPRESENTATIVES: Garland-Affolter Engineering Corp., Seattle, San Francisco, Los Angeles; Forslund Pump and Machinery Co., Kansas City; The Uhl Co., Minneapolis; Jules Beneke, St. Louis

PENN

Step out with

HOME CONDITIONING

FOR MODERNIZATION PROFITS THIS FALL


1
SELL THE SYSTEM
providing
Humidification
Air Cleaning · Circulation · Radiant Heat · Controlled Warmth · Ventilation · Year 'round Domestic Hot Water
2
SELL THE NEW ARCO AIR CONDITIONER
added to a radiator system, provides Humidification · Air Cleaning · Circulation · Ventilation
B
A
D
C
A. The Arco Air Conditioner supplies humidified, filtered, circulated air.
B. A modern concealed or free-standing radiator in each room.
C. New boilers for every fuel — oil, gas, coal, coke.
D. Taco-Abbott System for Summer and Winter Hot Water Supply.

New AMERICAN RADIATOR CONDITIONING SYSTEMS

. . . your biggest business getter for Modernization Jobs

ON ANY modernization job you run into — remember that American Radiator has the equipment to help you sell.

If it's a complete replacement, your prospects will be interested in air conditioning. That means a sale for you with the new American Radiator Conditioning Systems with all of their nationally advertised features.

If it's bringing an existing radiator plant up to date — then do a thorough job by selling the Arco Air Conditioner which adds humidification, air cleaning, circulation and ventilation to the advantages of radiator heat. Many other new products offer still other new refinements . . . bring new home comfort to your customers and additional profits to you.

On every modernization job, you can offer your prospects easy payments through the American Radiator Finance Plan. It pays you cash at once, without recourse or holdback. Your customer gets three years to pay, with no down payment, no red tape, no mortgages, on low FHA rates. There's profit in modernization work if you handle it *this* way.

•

AMERICAN RADIATOR COMPANY
DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION
40 West 40th Street, New York, N. Y.

Have you heard about the new

PRIZE CONTEST?

Take your wife to Europe and back at our expense!

Win a trip to Europe for two . . . a trip to Bermuda . . . or one of the 40 travel, Philco Radio or cash awards. How? It's easy. To qualify, sell one of three jobs outlined below. Each means one chance to enter the contest.

40 PRIZES

Travel • Radio • Cash

WIN A CHANCE WITH A SALE

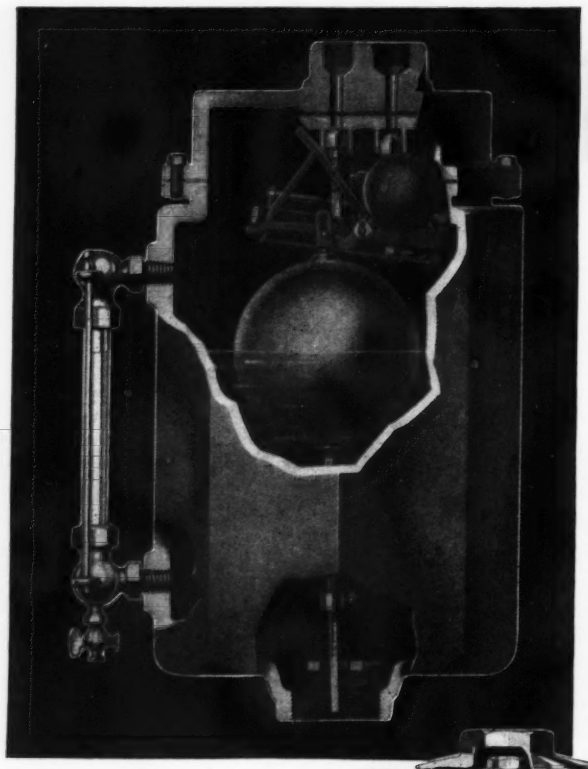
1. Sell a new Arco Air Conditioner for a radiator heating system.
2. Sell an Arco Copper-in-Heating job either new or modernization.
3. Sell an American Radiator Heating System for modernization.

Contest ends November 30th. Get complete facts and list of prizes from your wholesale salesman, American Radiator salesman or write to

CONTEST EDITOR
AMERICAN RADIATOR COMPANY
Division of
AMERICAN RADIATOR & STANDARD SANITARY CORPORATION
40 West 40th Street, New York, N. Y.

YOU'LL FIND IT MORE PROFITABLE TO SELL AND INSTALL

APPROVED MILVACO PRODUCTS



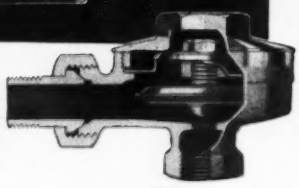
From foundry to the finished product the quality and operating efficiency of every MILVACO product is safeguarded by frequent inspection during modern precision methods of manufacture.

For a third of a century users of MILVACO Heating Specialties have known the dependability which is built into MILVACO products . . . that quality which, today, is responsible for the greater popularity of MILVACO products than ever before.

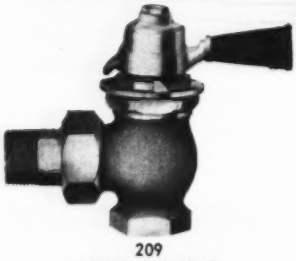
The complete MILVACO line of vapor and vacuum Heating Specialties . . . recommended and sold by leading, recognized jobbers . . . includes Radiator Valves and Thermostatic Traps for every low pressure requirement; Air Eliminators, Air Line Valves, Quick Vents, Float and Thermostatic Traps for drip and blast purposes, Boiler Return Traps, Water Feeders and other basement specialties.

Each unit is precision made to insure longer, more dependable service under conditions for which it is recommended.

M-80
BOILER RETURN TRAP



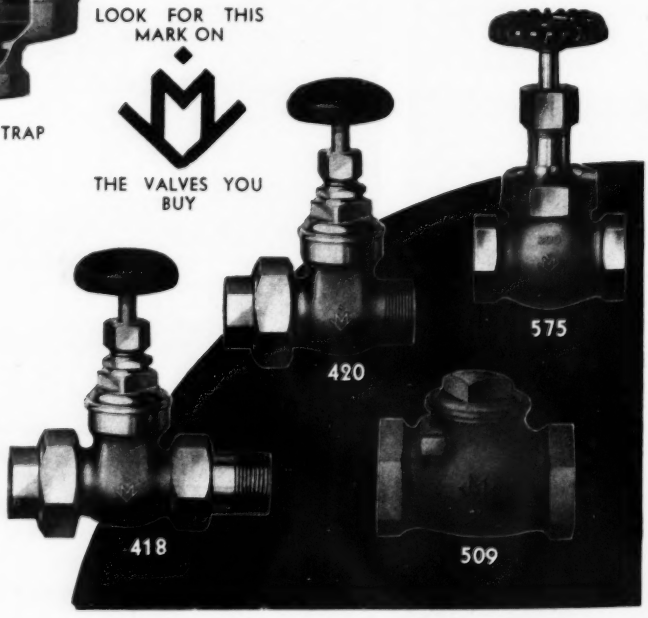
350
THERMOSTATIC TRAP



209
LEVER HANDLE
GRADUATED RADIATOR
VALVE

LOOK FOR THIS MARK ON

THE VALVES YOU BUY



APPROVED BRONZE VALVES

MILVACO engineering is the outstanding characteristic of the complete line of Approved MILVACO Bronze Valves.

Each valve is scientifically designed and machined with precision accuracy making possible additional time and labor economies in installation work.

In actual service MILVACO APPROVED Bronze Valves are more dependable and considerably more economical.

MILWAUKEE VALVE COMPANY

MILWAUKEE WISCONSIN

District offices in all principal cities.

Manufacturers of MILVACO Heating Specialties and APPROVED MILVACO Bronze Valves.

Thank you, MR. PLUMBER, FOR SELLING US AN AUTOMATIC GAS WATER HEATER

PUT your chest out when you go to sell automatic gas water heaters! Homemakers actually *appreciate* your recommendation because an ample quantity of hot water is a recognized blessing.

Gas-fired water heaters are easy to sell at *any* time of the year because they work automatically—they never require attention—they meet every hot-water need—they're economical to run.

They're *doubly* easy to sell right now because of summer service—because a *$100,000.00 sales campaign* is behind them, selling gas-fired heaters for you!

Plumber-dealers who are in the $10,000.00 prize contest for outstanding sales-marks are making double money. Push *your* sales. Make handsome profits. Win handsome cash prizes. Get after every prospect.

SPONSORS OF THE NATIONAL AUTOMATIC GAS WATER HEATER SALES CAMPAIGN

AMERICAN GAS PRODUCTS CORPORATION
CLEVELAND HEATER COMPANY
CRANE CO., PREMIER HEATER DIVISION
EVERHOT HEATER COMPANY
GAS AND ELECTRIC HEATER COMPANY
GAS EQUIPMENT COMPANY
HANDLEY BROWN HEATER COMPANY
HOFFMAN GAS & ELECTRIC HEATER COMPANY
HOTSTREAM HEATER COMPANY
HYNES & COX ELECTRIC CORPORATION
LAWSON MANUFACTURING COMPANY
LOVEKIN WATER HEATER COMPANY
J. W MOORE VALVE CORPORATION
THE PITTSBURG WATER HEATER CORPORATION
RUUD MANUFACTURING COMPANY
SANDS MANUFACTURING COMPANY
SURFACE COMBUSTION CORPORATION
UNITED AMERICAN BOSCH CORPORATION
WELSBACH COMPANY
WHITEHEAD METAL PRODUCTS COMPANY
JOHN WOOD MANUFACTURING COMPANY

AUTOMATIC GAS WATER HEATER COMMITTEE ASSOCIATION OF GAS APPLIANCE AND EQUIPMENT MANUFACTURERS, Room 1515, 60 East 42nd St., New York

Report NOW *your sales of automatic gas water heaters!*

$10,000 CONTEST ENDS SEPTEMBER 30 AT MIDNIGHT

New

MARSH No. 2 AIR AND VACUUM VALVE

Shades of horseless carriages!

---The adjustable vent is back in our midst!

THERE is no harm in rattling a family skeleton when it's your own family skeleton. This particular skeleton is from an old Marsh Catalog, and we display it here for the purpose of convincing you that our friendly opposition to adjustable venting of air valves is not a matter of "sour grapes"—not a matter of not liking it because the other fellow beat us to it. Quite the contrary—this leaf from a time-yellowed Marsh Catalog proves that WE THOUGHT OF IT FIRST!

Over the years we have become more and more convinced that since the primary purpose of an air valve is to eliminate the air from a radiator, the quicker it performs this function, the better.

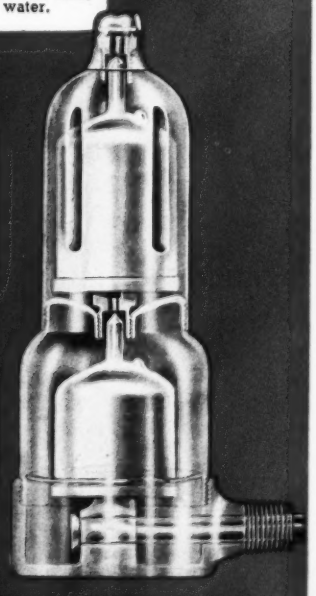
With the advent of automatic heat this function became all the more important. When the steam comes on, the first and foremost need is to get the air out of all the radiators rapidly. We have concentrated on that point for many years with the net result that we have today designed an air valve that will eliminate air 50% faster than any other valve that we have ever tested.

Yes, the Marsh Air and Vacuum Valve is YOUR kind of valve. It not only has this higher venting rate. It also has a triple vacuum seal that cuts fuel costs, and in spite of the higher venting rate it is as quiet as a gliding gull.

NO OTHER AIR AND VACUUM VALVE OFFERS THIS—

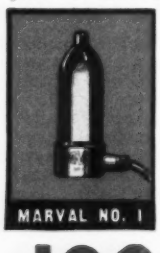
- **50% faster air-venting**
  By actual test the Marsh No. 2 Air and Vacuum Valve *does* vent air faster than any other valve. This higher rate is made possible by larger orifices and these larger openings in turn are a result of greater float power that is made possible by the Marsh double float construction with generous float chambers.
- **Triple vacuum seal**
  Marsh Valves hold their vacuum. At the first change from pressure to vacuum, the vacuum disc comes into play. As vacuum deepens, the upper float (in which atmospheric pressure is sealed) expands and forms a secondary seal. As vacuum further increases the lower vacuum diaphragm forms a third seal. This is the exclusive Marsh triple vacuum seal.
- **Quieter—despite rapid venting rate**
  Every Marsh Valve you install is one more proof that it is the quietest valve you can use — a valve that will not hiss, spit, or spurt water.

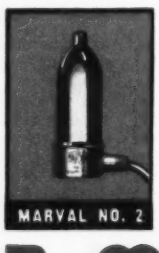
YOUR JOBBER STOCKS MARSH VALVES



Write for details and prices.

JAS. P. MARSH CORP., 2073 Southport Ave., Chicago, Illinois


MARVAL NO. 1


MARVAL NO. 2

TRAVALL

The Marsh line includes packless radiator valves, thermostatic radiator traps, float and thermostatic traps, pressure and vacuum gauges, and similar equipment.

JAS. P. MARSH CORPORATION

QUALITY HEATING SPECIALTIES SINCE 1865

KELVINATOR · AUTOMATIC HEAT ·

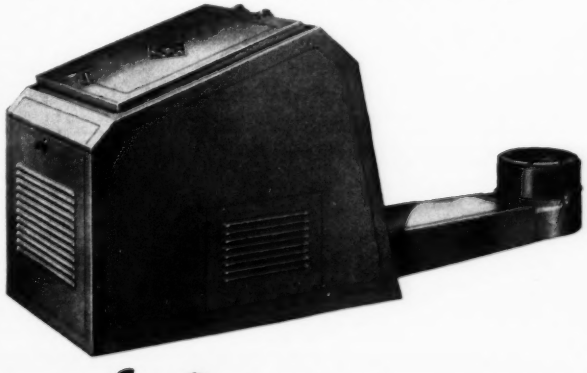
AUTHORIZED DEALER

Prestige Pays Profit

There are few known standards by which a buyer can judge value in automatic heating equipment. Dealers tell us that their own reputations and the standing of the Kelvinator name often are the deciding factors in a sale. Yet the fact that Kelvinator household equipment is known and used in millions of American homes is only the first advantage enjoyed by the Kelvinator Automatic Heating dealer.

Through 22 years of activity in building and selling household equipment, Kelvinator has progressed under sound principles and policies that protect the profit-position of its dealers. Sound principles in quality: Kelvinator would not dare to put its name on an un-proved product. Sound policies on market coverage: Kelvinator always has fortified its dealers with *complete* lines in every field that the Company has entered. Sound policies on merchandising: Kelvinator sales plans, dealer helps, and advertising activities are guided by broad experience in building profitable dealer business.

Profit-minded Kelvinator dealers also foresee invaluable advantages in their association with a well established manufacturer in the fast growing field of summer air conditioning. They will tell you that Kelvinator prestige is backed by thorough provision for full-profit activities in the automatic heating business. Kelvinator Corporation, Detroit, Michigan; London, Ontario; and London, England.



THE KELVINATOR AUTOMATIC COAL BURNER

Easily installed in steam or vapor, hot water, or warm air systems. Sizes to fit all needs. Full thermostat control, with special provisions for fast heating and for elimination of overheating. A sound Kelvinator value at prices that open big selling opportunities.

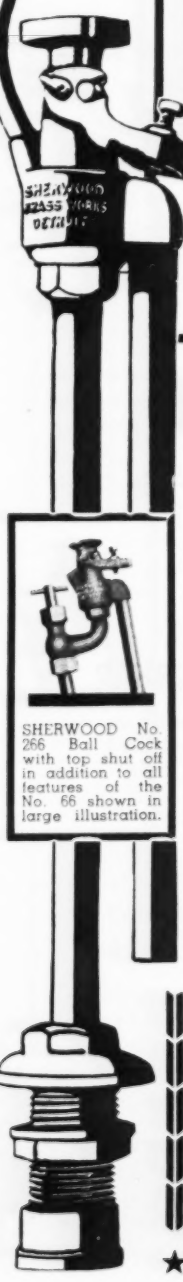
KELVINATOR OIL BURNERS AND COMPLETE BOILER BURNER UNITS

Employing the proved forced-draft principle. Unusual flexibility makes it possible to fit all conversion requirements from a stock of five sizes of burners. Boiler burners in two sizes.

Kelvinator

AUTOMATIC HEATING

DON'T JUDGE THEM BY **outward appearance!**



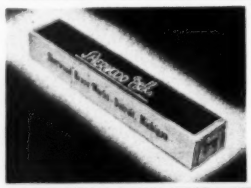
SHERWOOD No. 266 Ball Cock with top shut off in addition to all features of the No. 66 shown in large illustration.

YOU don't judge an automobile by outward appearance alone. You look UNDER THE HOOD to determine ITS ability to perform. By the same token, when judging a water closet combination, determine ITS ability to perform by what you find IN THE TANK.

No matter how beautiful a car may be, trouble will inevitably result if the motor is not mechanically perfect. The same holds true of the combination. It may be the last word in graceful lines and smart, modern colors, but if it is equipped with an inferior ball cock, satisfactory service cannot possibly be attained. That's why the choice of ball cocks is so all-important, both to the plumbing contractor and to his customer.

The moment you install a SHERWOOD Ball Cock you eliminate the principal cause for bathroom complaints. It performs faultlessly throughout years of service and it creates a degree of customer satisfaction that is unequalled. It ends, forever, the irritating noise, leaks, whistles and gurgles so common to the ordinary ball cock and it closes against any city water pressure.

Be sure your customers get the best available in ball cocks. Recommend SHERWOOD Ball Cocks for greater satisfaction and lasting profit. Other business will unquestionably follow. SHERWOOD Ball Cocks are available through your jobber. Order today.



NOW . . .

packaged!

So that customers may more readily identify them on your counters or on your shelves and so as to facilitate stocking, SHERWOOD Ball Cocks are now packaged in these attractive, brightly colored cartons.

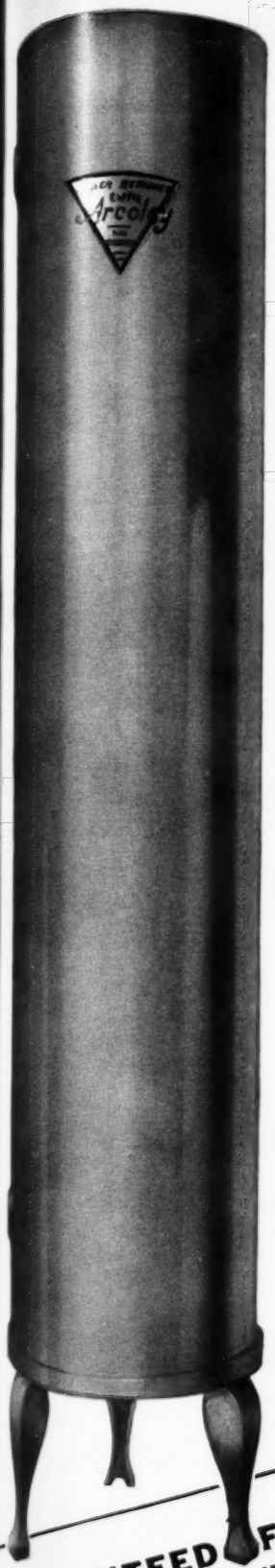
SHERWOOD BRASS WORKS

6331 EAST JEFFERSON AVENUE DETROIT, MICH.

REPRESENTATIVES: James A. Riordan Co., Inc., 1600 E. 7th St., Los Angeles; James A. Riordan Co., Inc., 5319 Admiral Way, Seattle; Mr. E. S. Thompson, 2222 Chestnut St., Philadelphia; Mr. Fred S. Wilsey, Plymouth Bldg., Minneapolis; Mr. A. Mitchell, Jr., 249 Central Avenue, Albany, N. Y.; Mr. M. L. Sampliner, 1705 Glenmont Rd., Cleveland; Feeney & Gallagher, 402 E. 14th St., Kansas City, Mo.; Fred'k G. Hoffmann, 831 Edgewood Ave., Trenton, N. J.; James A. Riordan Co., Inc., 955 Bryant St., San Francisco.

THEY'RE QUIET!

SHERWOOD Ball Cocks



A NEW RANGE BOILER AND TANK OF..

ARCOLOY

A STRENGTHENED ALLOY *Arcoloy* OF ARCO COPPER . . .

Reg. Trade Mark

DEVELOPED AND PRESENTED BY AMERICAN RADIATOR COMPANY

WHAT IT IS... Arcoloy is a new patented metal* developed by American Radiator Company, composed of approximately 95% pure copper plus strengthening agents. It combines the mechanical strength of mild steel with a higher resistance to corrosion than pure copper itself. It is practically indestructible. It successfully resists most acids and alkalis. It is guaranteed for 20 years under normal water conditions and use.

NOW IN TANKS... Now American Radiator Company presents a Range Boiler and Tank made from this new metal. Every tank that bears the trade mark "Arcoloy" is 100% Arcoloy throughout. There is no other metal, no solder in its construction. It is welded with Arcoloy welding rod. Even the spuds are fabricated from the same rustproof metal.

Finished tanks of Arcoloy have the strength of mild steel with the beauty appeal to the consumer of pure gleaming copper. They match in lustre and color the Arco Copper Pipe and Fittings that connect the hot water supply system. Appearance is further enhanced by burnishing and protected by a coat of lacquer.

GUARANTEED... Arcoloy Range Boilers and Tanks are fully guaranteed—and made to live up to the guarantee. They have been proved by years of actual use in gas-fired storage water heaters. They will surpass competition in strength, durability, and beauty; meet competition in price. They are honestly sized. They'll add to your reputation when you feature them; guard your reputation when you install them; and pay you a profit all the way. Ask your Arco jobber or write today for details.

* U. S. Pat. No. 2017825

Arco Pipe and Fittings Division

AMERICAN RADIATOR COMPANY

Division of American Radiator & Standard Sanitary Corporation

40 West 40th Street, New York, N. Y.

CARRIED IN STOCK BY ARCO JOBBERS EVERYWHERE AND IN ALL ARCO WAREHOUSES

GUARANTEED FOR 20 YEARS

UNDER NORMAL WATER CONDITIONS

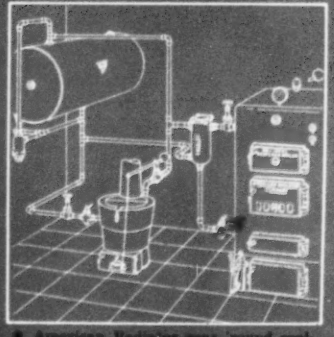
Rustproof • Corrosion Resisting • Pressure Tested

7 sizes: 25 to 100 gallons • Full rated gallonage.

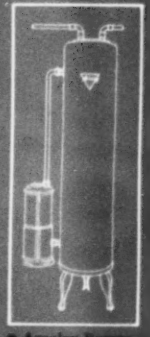
The Strength of Steel—the Beauty of Copper

SOLD ONLY BY PLUMBING AND HEATING SUPPLIES JOBBERS

• Arcoloy Storage Tank with Indirect heater on automatically fired boiler; stores constant supply of year 'round domestic hot water from the heating boiler.



• American Radiator year 'round coal-burning Domestic Hot Water Supply System, showing Arcoloy Storage Tank connected to indirect heater for winter, and to Scuttle-a-Day for summer use.



• Arcoloy Range Boiler with side arm heater stores hot water when heater is lighted.

The New ARCO TEE

WITH REDUCTION ON THE RUN

PROVIDES COPPER-TO-COPPER CONNECTIONS FOR

Copper in Heating

New times! New methods! Modern heating installations now use the new Arco wrought copper RR Tee and the Copper-to-Copper Connection. With them, heating men have discovered they can offer the added advantages of Arco wrought copper at practically the price of a rustable job. It is rustproof, corrosion resisting, non-porous. It is self insulating—cuts down heat loss, saves fuel. Its full flow features and smooth inner walls mean quicker circulation of steam or water—less loss through friction.

And the Copper-to-Copper Connection means a cleaner job with clean hands . . . with fewer fittings and no laborious cutting and threading. Joints, more easily made, are stronger than the pipe itself, proof against strain and vibration. Only the torch that put it together can part it.

Get the facts on Copper in Heating with the Arco Copper-to-Copper Connection. Discover how the new Arco wrought copper RR Tee saves time and fittings. The complete line of Arco Fittings comes in all sizes from ¼" to 4" inclusive. Make your next heating job a really modern job with less trouble and more profit.

ARCO PIPE AND FITTINGS DIVISION
AMERICAN RADIATOR COMPANY
DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION
40 West 40th St., New York, N. Y.

HERE'S THE BOOK THAT TELLS ALL ABOUT IT

WRITE FOR YOUR FREE COPY

Here's complete information on Copper in Heating . . . on the Arco Copper-to-Copper Connection! Includes sample heating layouts. Shows the way to more profitable jobs. Write for this helpful book on your letterhead. It's free!

WIN A FREE TRIP TO EUROPE FOR TWO

Sell an Arco Copper in Heating job to enter this easy contest. Win a trip to Europe for yourself and your wife . . . a trip to Bermuda . . . any one of 40 travel, Philco Radio and cash prizes. Contest closes Nov. 30th, 1936. There's still time for you. Write today for the details.

FEATURED IN AMERICAN RADIATOR CONDITIONING SYSTEMS

ARCO Full Flow

WROUGHT COPPER FITTINGS AND COPPER PIPE

A Model that's YEARS AHEAD ... designed to sell and serve

The new Whitehead Monel Metal Cabinet Sink, 25" wide series, with integral backsplash construction, and bowl moved forward to 2½" from front edge. Available in lengths from 48" to 144", double-bowl models from 84" to 144".

This newest-model Whitehead 25" wide sink of Monel Metal has 25 features to bring sales your way

HERE'S a sink that will take your eye. What's more important, it will make the homeowners about you reach for their checkbooks when they learn that you install it.

You've been selling Monel Metal sinks by Whitehead. You know they make easy dollars for you. Now glance at the list of features this newest model offers, and get set for a lot more business.

Note that this sink says: "easy to work at." For the bowl is only 2½ inches from the edge—no more leaning over. Another help: the back splash whether 1½" or 8" high, is an integral part of the sink.

Whether your customer's kitchen needs single-bowl or double . . . whether you fit it best with a 48" or a 144" model or in between . . . you're selling the most beautiful, the most durable metal that ever went into a sink—Monel Metal. In this new model Whitehead has simply gone the limit to give you a sink that's years ahead of others in customer appeal.

HERE ARE THE 25 ADVANTAGES . . . COUNT 'EM UP.

no-back-strain bowl
1 piece back
pedestal faucet connection
all-steel underbody
glass rest
soap dish
easy-drain bowl
less dish breakage
fractional-inch sizes
rust-proof
corrosion-resistant
easy to clean
swing faucet to match sink
tough
stronger than steel
butler finish
cabinets to match
hose spray connection
sound deadened
eye-catching beauty
quick-grab handles
rounded corners
utilizes under-sink space
toe-room cabinet
raised no-drip edge
moderate price

Don't fail to stress Monel's absolute rust-proofness. And the fact that ordinary cleaning preserves its silvery gleam for a lifetime. This model sink of this modern metal should go into dozens of homes near you where the housewife uses her own kitchen . . . and dozens of others whose owners want a proved and inexpensive way to attract tenants.

You can put them in both kinds of homes . . . and put profits in your pocket . . . if you get busy and show people what a bargain you have to offer. For full details and the price-list, address: Whitehead Metal Products Co. of New York, Inc., 304 Hudson St., New York, N. Y.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 WALL STREET NEW YORK, N. Y.

Monel Metal

Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

The following Manufacturers have co-operated by consolidating their buying information in the 1936 Edition of Domestic Engineering Plumbing & Heating Catalog-Directory and 1936 Mid-Year Supplement

Abingdon Sanitary Mfg. Co.
Ackerman-Johnson Co.
Acme Asbestos Covering & Flooring Co.
Acme Metal Products Corp.
Acme Shower Curtain Co.
Adams Engineering Co., Inc.
Afco Mfg. & Sales Co.
American Blower Corp.
American Brass Co.
American Die & Tool Co., Inc.
American Gas Products Corp.
Anderson Products, Inc.
Armstrong Bros. Tool Co.
Atchison Specialty Mfg. Co.
Automatic Primer Co.
Autovent Fan & Blower Co.
Ayling & Reichert Co.

Badger Fire Extinguisher Co.
Badger & Sons Co., E. B.
Baltimore Valve Corp.
Barber Gas Burner Co.
Bashlin Co.
Bead Chain Mfg. Co.
Beaton & Cadwell Mfg. Co.
Beaton & Corbin Mfg. Co.
Beaver Pipe Tools, Inc.
Bell & Gossett Co.
Benson Co., Inc., Alexander R.
Bernz Co., Inc., Otto
Biggs Boiler Works Co.
Black & Decker Mfg. Co.
Blake Specialty Co.
Blue Seal Chemical Co.
Bonalite Corp. See Swedish Crucible Steel Co.
Boosey Mfg. Co., Norman
Bradley Washfountain Co.
Breckwoldt & Son, Inc., Julius
Brey & Krause Mfg. Co.
Bridgeport Brass Co.
Brunswick-Balke-Collender Co.
Buffalo Meter Co.
Bullard Specialty Co.
Burnham Boiler Corp.

Camden Pottery Co.
Capitol Mfg. & Supply Co.
Carey Co., Philip
Carty & Moore Engineering Co., Inc.
Case and Son Mfg. Co., W. A.
Cash Valve Mfg. Corp., A. W.
Celina Mfg. Co.
Chase Brass & Copper Co.
Chelsea Metal Stamping Co.
Cheney Co.
Chicago Granitine Mfg. Co.
Chicago Mfg. & Distributing Co.
Chicago-Wilcox Mfg. Co.
Citrushine Mfg. Co.
Cleveland Brass Mfg. Co.
Cleveland Heater Co.
Coleman, Allan J.
Coleman Equipment Co.
Columbia Radiator Co.
Commonwealth Brass Corp.
Compound Injector & Specialty Co.
Concrete Fixtures Co.
Consolidated Brass Co.
Curtin Valve Co., A. F.

D. & T. Mfg. Co. See Bell & Gossett Co.
Dahlquist Mfg. Co.
Dart Mfg. Co., E. M.
Davis Engineering Corp.
Decatur Pump Co.
Deegan Mfg. Co., E. J.
Delaware Lumber Co.
Deming Co.
Denier Co., James C.
Desolvo Mfg. Co.
d'Este Sales Corp., Julian
Detroit Lubricator Co.
Dole Valve Co.
Douglas Co., John
Dresser Mfg. Co., S. R.
Duriron Co., Inc.

Eagle-Picher Lead Co.
Eastern Foundry Co.
Economy Pumping Machinery Co.
Elkay Mfg. Co.
Elkhart Foundry & Machine Co.
Elkhart Iron Works
Enbee Mfg. Co.
Erie Tool Works
Evry-Use Products Co., Inc.
Excelsior Leather Washer Mfg. Co., Inc.
Excelso Products Corp.

Fedders Mfg. Co.
Federal Radiator Co. See Burnham Boiler Corp.
Fiat Metal Mfg. Co.
Fitzgibbons Boiler Co., Inc.
Flannery Co., P. J.
Florence Stove Co.
Franklin Rubber Corp.

Gardiner Metal Co.
General Ceramics Co.
General Wire Spring Co.
Gerstein & Cooper Co.
Goetze Gasket & Packing Co., Inc.
Gorton Heating Corp.
Grabler Mfg. Co.
Grinnell Co., Inc.

Haas Co., Philip
Harris & Co., Arthur
Healey Brass Foundry Co., Peter
Healy-Ruff Co.
Hedges-Walsh-Weidner Co.
Hercules Chemical Co., Inc.
Hindley Mfg. Co.
Hoffman Specialty Co., Inc.
Hollands Mfg. Co.
Holsclaw Bros., Inc.
Hotstream Heater Co.

Ilg Electric Ventilating Co.
Imperial Brass Mfg. Co.
Insto-Gas Corp.
Isert Co., Inc., John H.

Jenkins Bros.
Jenkins Mfg. Co.
Jennison Co.
Jewel Mfg. Co.
Johns-Manville

Kainer & Co.
Kam Water Heater Mfg. Co.
Kaustine Co., Inc.
Kemp Mfg. Co., C. M. See Richmond Foundry & Mfg. Co.
Kennedy Valve Mfg. Co.
Ketcham Mfg. Corp., G. M.
Kewanee Boiler Corp.
Key Co.
Keystone Brass Works
Kitson Co.
Kleenaire Corp.
Kleensan Corp.
Knott Mfg. Co.
Kokomo Sanitary Pottery Corp.
Koven & Brother, Inc., L. O.
Kuehner Co., H. R.
Kuhn & Jacob Moulding & Tool Co.
Kuhns Bros. Co.

Lavelle Rubber Co.
Lawson Co., F. H.
Leavitt Machine Co.
Lee Brothers Foundry Co.
Lehman Sprayshield Co.
Leonard-Rooke Co.
Lidseen, Inc., Gustave
Lockport Fittings Co., Inc.
Lonergan Mfg. Co.
Lookout Boiler & Mfg. Co.

Marvel Machine & Brass Works
Marvel Mfg. & Sales Co.
McDonnell & Miller
Meer Made Products
Miami Cabinet Division of Philip Carey Co.
Michigan Pipe Co.
Midland Metal Mfg. Co.
Midwest Piping & Supply Co., Inc.
Milwaukee Brush Mfg. Co.
Milwaukee Stamping Co.
Milwaukee Valve Co.
Modern Equipment Corp.
Modern Iron Works
Modern Wares, Inc.
Mueller Brass Co.
Mueller Steam Specialty Co., Inc.

Nash Engineering Co.
National Metal Products Corp.
National Pipe Bending Co.
National Regulator Co.
National Steel Construction Co.
National Water Lift Co.
Naugatuck Mfg. Co.
Never Split Seat Co.
New Process Rubber Co., Inc. See Bonalite Corp.
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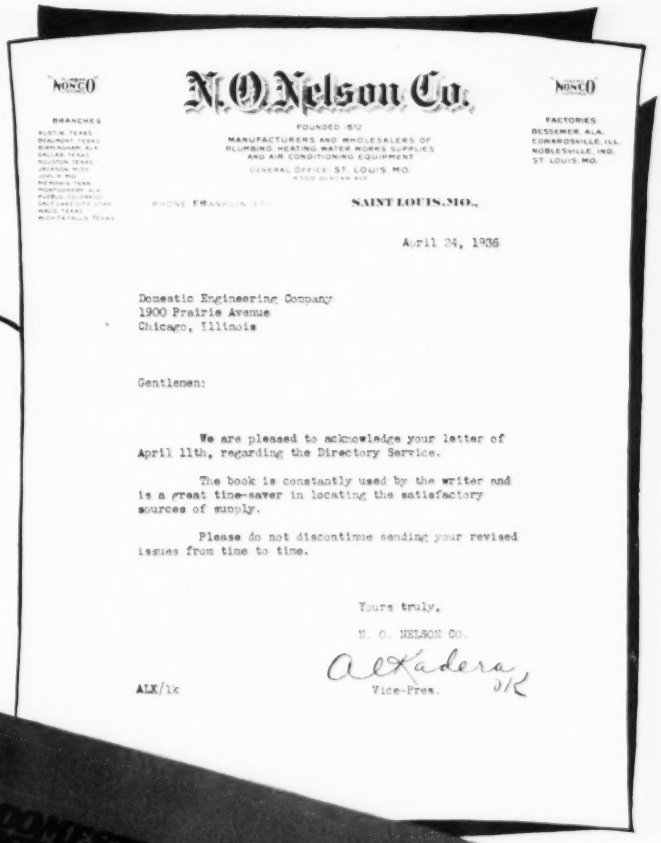

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A. Kadera

Vice-Pres.

ALK/lc

Note: We wish to thank Mr. Kadera of N. O. Nelson Co., St. Louis, Mo., for his letter; also, we extend our appreciation to the many hundreds of Users who have so kindly written us regarding the utility of the new and larger edition of Domestic Engineering Plumbing-Heating Catalog and Directory.

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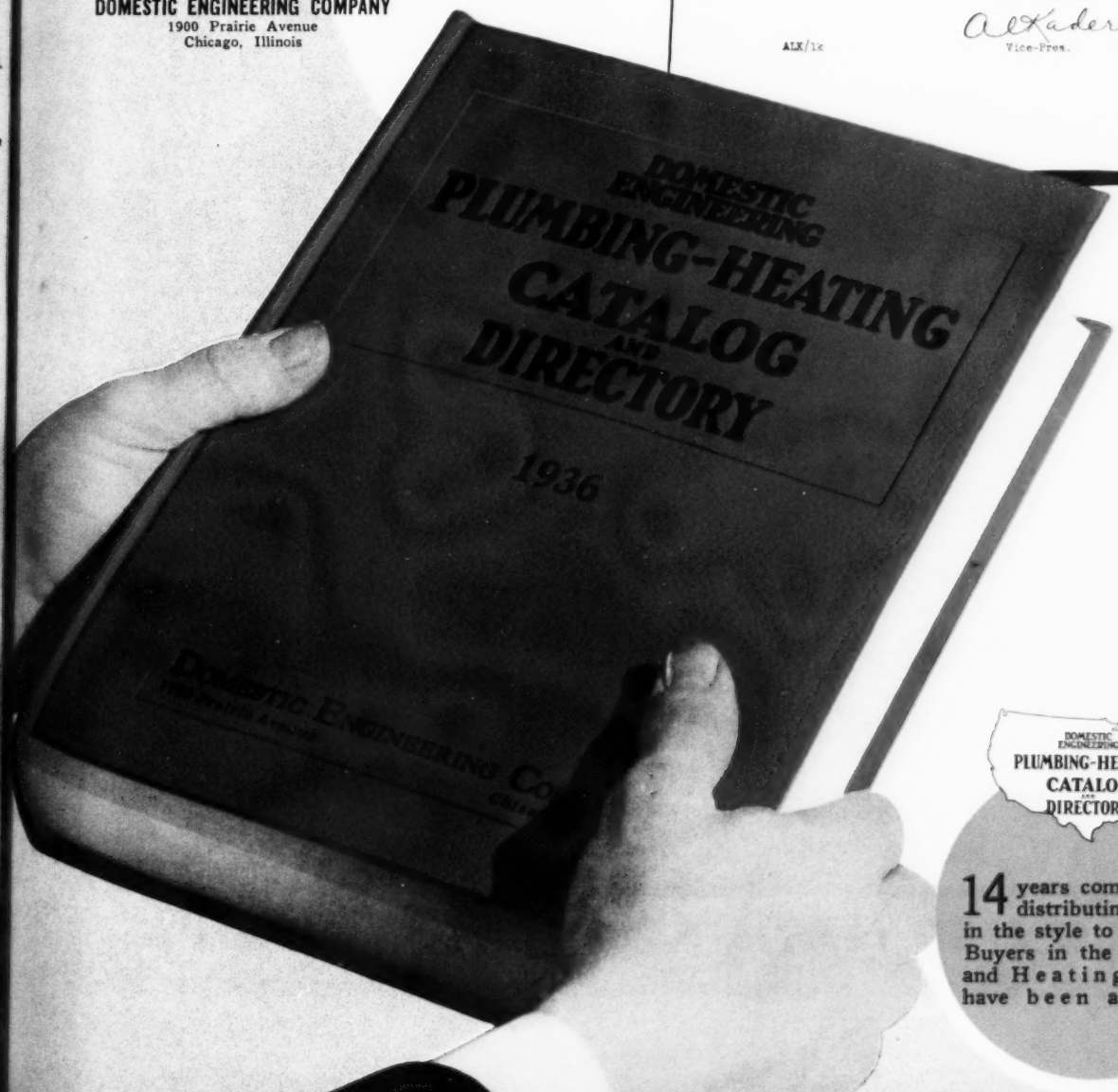

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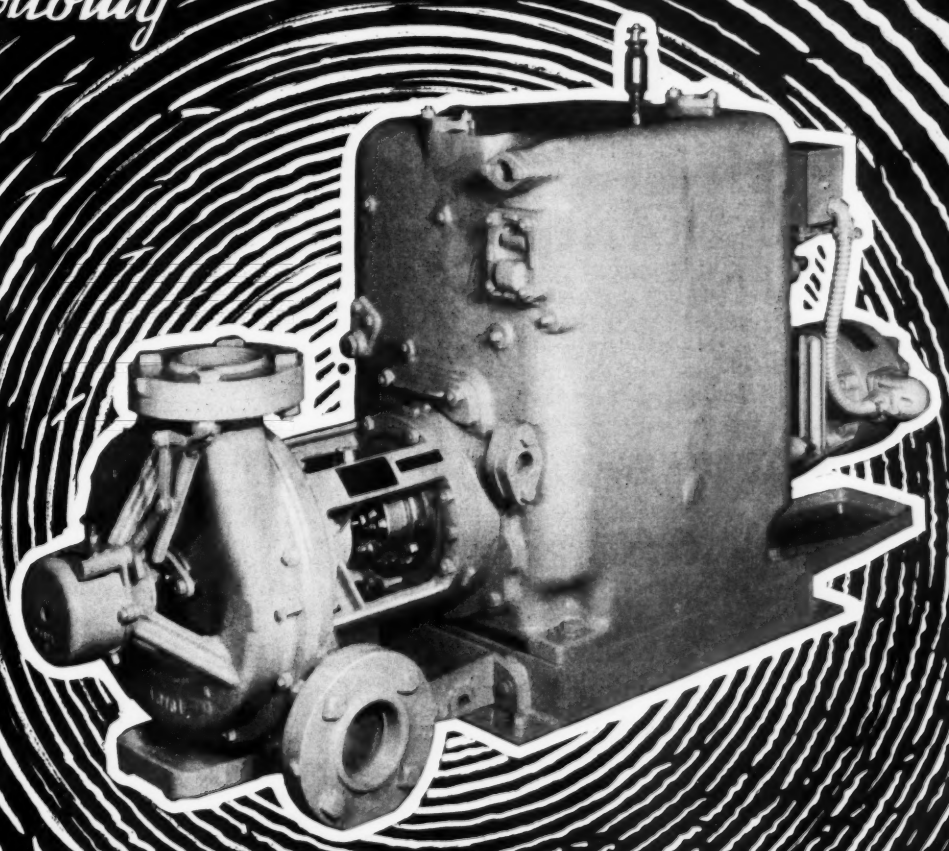

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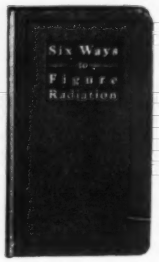

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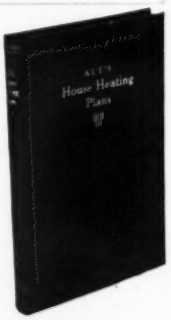

By HAROLD L. ALT. This book will give the heating contractor the very latest information for use in designing and installing heating systems for bungalows, residences, garages and combination store and apartment buildings. All of the smaller types of structures. It includes design for all of the various boiler and radiator systems, data on accessories and gives full and complete layouts. Progress within recent years in the design and manufacture of heating equipment has been so great that small structural heating system installations present entirely new and different problems. These are solved in this book. 208 pages, 5½x8½, bound in cloth. Price postpaid **$1.00**

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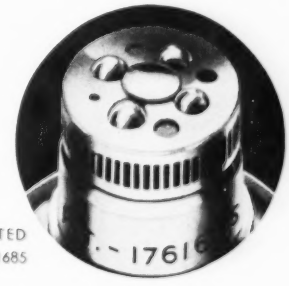

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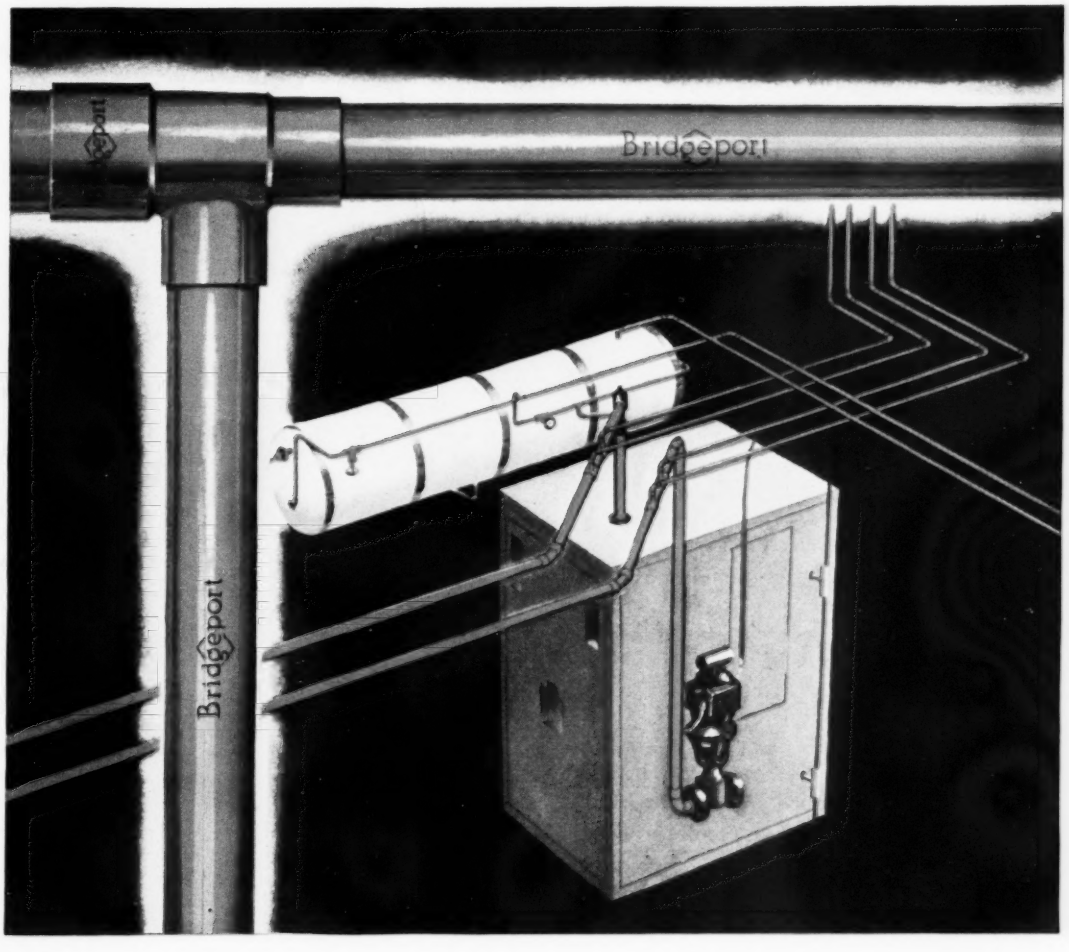

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Between Ourselves

Ideas and Ideals . . . which make up . . . this Issue . . .

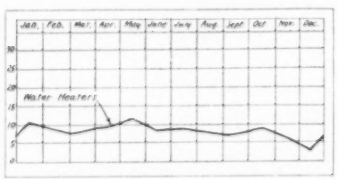
This Month's Cover

The world probably is more news conscious today than ever before in its history. All trends are towards an even greater dissemination of news. In keeping with this, news in DOMESTIC ENGINEERING is being stressed proportionately. The front cover of this issue emphasizes the different classes of news which are being covered regularly in each issue. As developments warrant it, additional news features and services are included, as in the Recognition and Business sections which were introduced to readers several months ago.

Beyond this there is the matter of highlighting the outstanding items of news happenings during each preceding month. A desirable and necessary feature of any modern news service is the correlation of individual news items in regard to their relative importance. This is being done in the section of this issue devoted to news briefs. It is our endeavor to give readers a general understanding of what has taken place recently in our industry, the relative importance of the different happenings and a brief summary of the outstanding items.

Approaching a Peak

Sales curves show that, while water heaters reach a peak in the spring, there also is a high point for this equipment in the fall. This is as might be expected. Home owners become conscious of the desirability of abundant supplies of hot water for domestic purposes as the weather becomes colder. In addition, the fall season is one of checking equipment for winter service, and this naturally leads to repairs, replacements and additions to existing facilities.



In any sales work, it is as important to supply what is desired as it is to be able to sell it. While the making of the sale is the first step, providing a system and installation which will give water at the correct temperature, in necessary quantities, when needed and at the point desired, is what determines the satisfaction of the customer. This installment of the series of articles on practical plumbing goes into considerable detail in regard to furnishing a supply of properly heated water to a building and how this can be designed to make available, almost immediately, heated water upon the opening of any hot water faucet in the system.

A Good Tip for Cleaning Jobs

This month the Merchandising Counsellor discusses, among other things, how one enterprising contractor-dealer has obtained printed cards to attach to the heating equipment he cleans. This has a place for two date lines. One tells when the plant was cleaned and the other suggests when it should be cleaned again for maximum efficiency and satisfaction. It serves as a constant reminder of who to call, either for the next cleaning job or when any heating plant service is needed.

It's the Humidity

If a prospect should ask you just how much water in gallons per day or per hour must be evaporated to maintain a healthful and comfortable condition in his home, could you give him an accurate and satisfying answer? Efforts are being intensified to make the public realize that air conditioning does not mean only cooling, but that it includes also humidifying, dehumidifying, heating, air cleaning, air distribution and air circulation. With this greater emphasis on winter air conditioning there must develop a corresponding increase in the demand for adequate and easily understood information.

In this issue, Harold L. Alt discusses the problem just as if he were a contractor-dealer who has been asked the question by a prospect. He finds that, in assuming certain conditions, a bungalow will require .65 lb. of water per hour, a small house will require 1.3 lb. of water per hour and a large house will need 2.16 lb. of water.

Your Editor

Points of Distinction

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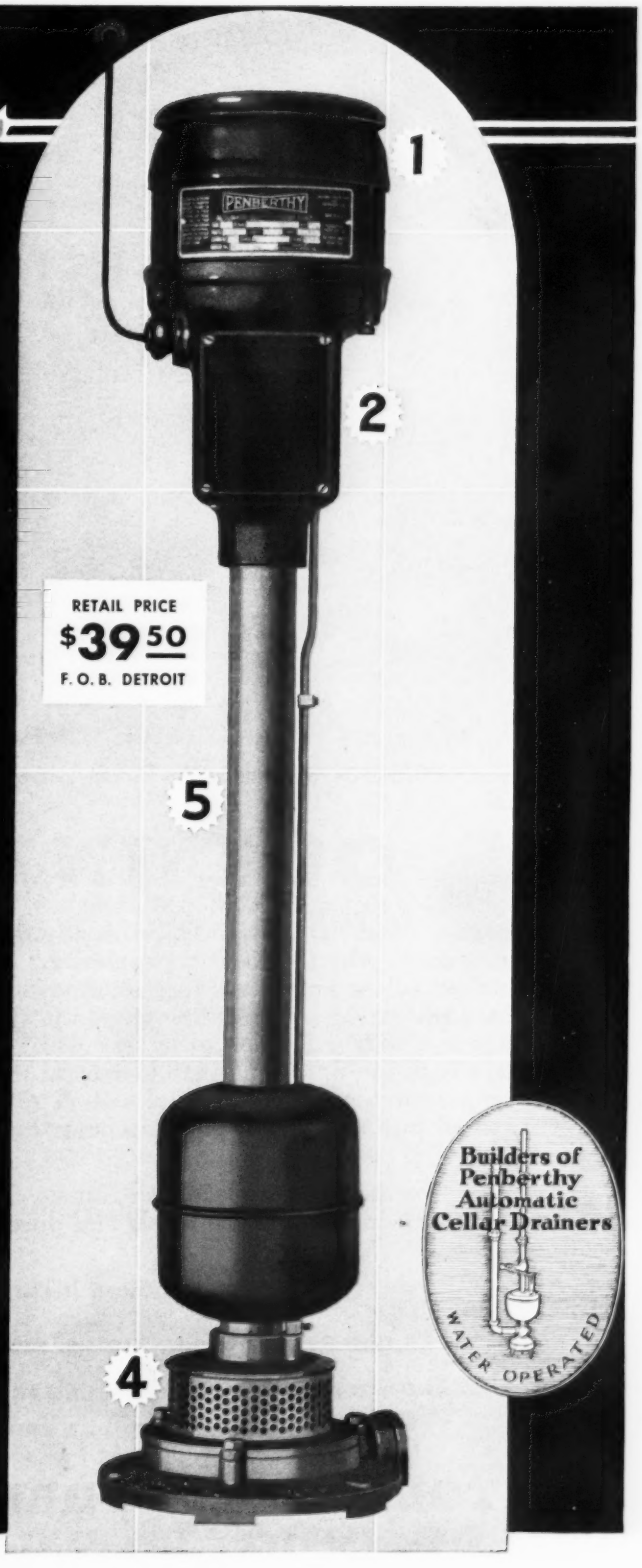

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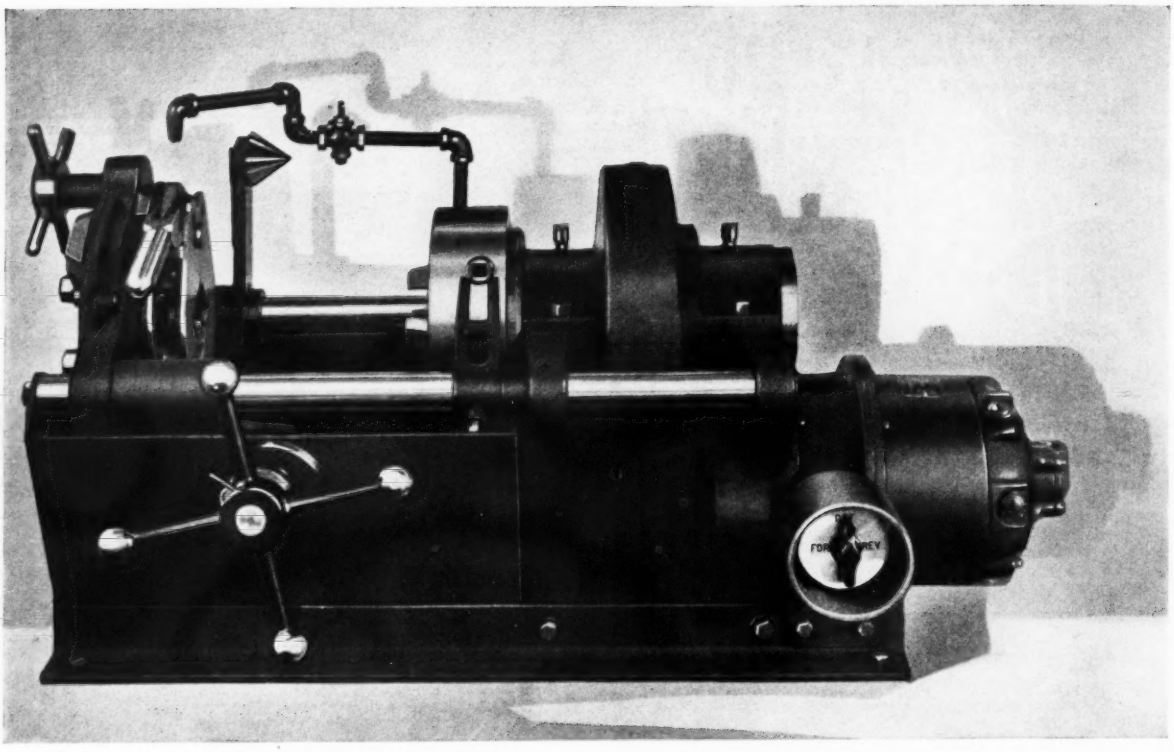

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Made in two models Standard and Super. Both alike except die heads and dies. Standard has separate non-opening die heads and dies while Super has separate quick-opening die heads and dies.

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OUR INDUSTRY

September, 1936

A Trend and A Responsibility

THE responsibility of our industry to assist and enlighten newcomers is increasing at the same rate that business is improving.

With each increase in business there is that much added incentive for new plumbing and heating contractor-dealers to become established. The fact that this is more than a trend or mere surmise is apparent both in checking work which is being let and in contacting those who are doing work. It is inevitable that there will be new members in this industry, just as it was natural for those who now are established to have been attracted to it. The problem now facing our industry is not with new men just entering, but with these men after they are here. If new men were not attracted to the plumbing and heating field, a condition of stagnation would be evident. The life, activity and opportunity in any industry is indicated by the extent to which it attracts newcomers. New blood in any industry constitutes a healthy sign and is to be desired. Any problems rising from this usually center about the inability of an industry to assimilate these newcomers. Assimilation should mean the imparting of the traditions of the industry, the providing of information regarding correct and sound business methods and the supplying of knowledge of installations and practices to the end that the newcomer becomes a credit to the industry of which he is a part and of definite value to the public he serves.

If a man approaches a new occupation or line of work with a full understanding both of what will be required and expected of him, his attention is most likely to be diverted to some other line if he is not willing or fitted to assume the responsibilities necessary for success. Not only in connection with our industry but with practically every line and phase of life there is heard the statement by misplaced individuals that they never would have entered what they were in if they had known more about it at the start. All of this is not mentioned as an indication of how new men can be kept out of our industry. Rather, it is offered as a means of bringing about better competition from those who must, and inevitably will, enter.

It is significant that President Werner of the N.A.M.P. emphasizes in his report this month that new booklets for the purpose of dramatizing the dangers of improperly installed plumbing and for pointing out to home owners that they should be sure they are safe by calling in a qualified master plumber to inspect and correct their plumbing systems are being made available to non-members as well as members. Mr. Werner states, "All master plumbers should have available to them the benefits of N.A.M.P. work."

Of further interest and significance is the recent action of the Wisconsin Master Plumbers Assn. They have just recently obtained 1,500 copies of a reprint from DOMESTIC ENGINEERING which was designed to eliminate mistakes and misunderstandings in figuring correct selling prices for various costs, overheads and profits. These are being sent to all of the master plumbers in the state of Wisconsin regardless of whether or not they are members of the association.

The effect of this should be at least three-fold. For uninformed individuals, by knowing what their prices should be if they are to make an overhead and profit sufficient to keep them in business and provide an adequate living for themselves, this educational effort on the part of the Wisconsin association should serve as a powerful influence against destructive price cutting competition, much of which can be traced to a reckless disregard or lack of understanding of fixed charges.

For those who are experienced, this educational effort will be invaluable because, in raising the standard of competition, it will tend to eliminate the necessity for them to work against destructive competition.

For the association itself, it will serve to prove further, to members and non-members, the vital part which it plays in the business life of our industry, and through this it cannot help but receive corresponding benefits through increased membership and support.

None of this should be construed as meaning that the standards for our industry should be let down or that those who are incompetent should be encouraged to become contractors. On the contrary, the present standards should be maintained and the tendency to raise them even higher should be fostered. This can be brought about most effectively and our industry can progress most rapidly only when newcomers approach it knowingly, without any illusions, either as to profits obtainable or services expected.

NEWS Briefs — Highlights of this

Monthly Progress Report of Assn.'s Activities

Directors Get Territories

- *Werner adopts monthly reports to inform entire industry of plans and progress of the national association—This month devoted to new direct mail booklets and action on resolutions*

N.A.M.P. Report

- *Monthly reports emanating from President Werner bring national association's activities to attention of industry*

President Werner has instigated the policy of issuing reports on the activities of the national association so that members may be kept conversant with the events of their association and non-members be shown the purpose and aims of the national group.

In a section of this report devoted to resolutions, the following points were brought out: Resolution No. 2 having to do with apprentice labor on PWA work has been called to the attention of Secretary Ickes and the assistance of the Federal Committee on Apprentice Training enlisted; Resolution No. 6 dealing with electrical groundings will be followed by the association's representative on the American Research Committee on Electrical Grounding.

Also brought out in the report was the fact that booklets emphasizing the relationship between good plumbing and good health are to be published shortly. These booklets, when they are published, will be available for distribution to both members and non-members. From present plans these booklets will be ready for distribution before the end of September. The work on the publishing of reports of the Buffalo convention is now well along in progress so that members are assured of receiving the proceedings within the time limit specified by Resolution No. 9 which was passed in June.

Still another portion of the report was devoted to the work that is being carried on in establishing a joint planning board. It was indicated that the conference committee of the national association is already at work on the subject and a meeting is planned in September. President Werner announced the territories to which the various directors have been assigned.

Further details are to be found in the Trade section of this issue.

A. S. S. E.

- *Thirty-first annual meeting at Buffalo discusses electrical groundings, standards, cross connections and back siphonage—Frank discusses cooperation with N.A.M.P.*

About 85 were in attendance at the thirty-first annual meeting of the American Society of Sanitary Engineering in Buffalo, N. Y., August 18-20. Officers elected were as follows: E. W. Cade, president; G. R. Stolz, first vice president; Walter Potter, second vice president; W. H. Meadows, third vice president; A. R. Deisseroth, fourth vice president; C. A. Hallgring, fifth vice president; Walter Dunn, sixth vice president; E. C. Schavey, seventh vice president; J. F. Doud, treasurer; and W. K. McAfee, board of directors. J. R. Walker was reappointed secretary.

Protect Public Health

The spirit of the meeting was exemplified by a desire to adopt a program which would include the necessary measures to protect public health. Papers read before the meetings included the report of the committee on electrical groundings and the report of the committee on minimum requirements for plumbing and standardization of plumbing equipment. Other subjects discussed were safe air gaps and a study of the subject of cross connections and back siphonage.

Still another approach to the study of public health was to be found in the work of two members of the association, L. A. Cornelius and B. O. Tilden. Mr. Cornelius prepared a booklet, "They Die from Neglect," a compilation of medical evidence on water borne disease. Mr. Tilden's paper, the fifth in a series, was entitled, "The Evolution of the Water Closet," and sketched the growth of sanitary measures and health control from ancient times up to the present day.

Further details are to be found in the Trade section of this issue.

Trend Continued

- *July business showed advance of 40 per cent over a year ago—Advance one of the largest for the year*

The business of plumbing and heating wholesalers showed an advance of 40 per cent in July over last year. Despite the fact that plumbing and heating business has been running consistently ahead of last year, this advance was somewhat more than was expected in June. The increase in boiler and radiator prices brought an unusually large advance in heating shipments in June. It was presumed that this unusually large June advance would be reflected in a slight decline in July. On the contrary, the July advance is one of the largest for the year.

Due principally to the large volume of boiler and radiator shipments in June, the DOMESTIC ENGINEERING Index rose to 96.9 per cent of the average volume for 1927, '28 and '29. According to reports, the July increase, as reported by wholesalers, was due prin-

Month's Happenings

NEWS Briefs

Is One New Feature of N. A. M. P. Service

cipally to a marked gain in the sale of plumbing items.

The largest gains were reported in the Middle West and the South West. In the Middle Atlantic, West South Central and Mountain States, July business declined from June although it showed a substantial gain over the same month of last year. This decline from June in the Middle Atlantic States is attributed to a temporary decline in boiler and radiator sales.

August to Show Advance

Almost half of the wholesalers expect August to show an advance over the same month of last year. The drought is affecting business in some sections, principally in the Dakotas, Kansas and Nebraska. However, even in these sections the income of the farm population as a whole has not been materially affected, as much higher prices prevail on the crops that they have been able to harvest. As one wholesaler states, business in these sections will be affected more by how the people feel than by the amount of money they actually have available.

Sales of air conditioning equipment, oil burners, stokers and gas heating equipment continued a sharp upward trend. In the city of Chicago a new record was set during July for the number of installations made in any single month. What was particularly interesting was that a good portion of these installations went into residences.

According to present indications, the last half of the year will continue to show improvement over the previous year despite the fact that the plumbing and heating industry showed a sharp upward trend the last half of last year.

Further details are to be found in the Business section of this issue.

More on Robinson-Patman

• *Additional sources of information presented because of widespread interest in provisions of the bill*

The Robinson-Patman Bill continues to be of outstanding interest to all branches of the plumbing and heating industry as we go to press with this month's issue. Readers will recall that on these pages last month opinions from different leaders in our industry were presented. In order to have available for dissemination information which reflects the latest developments and thinking on this important measure, efforts were made during the month to follow up both the original and additional sources of information used in earlier discussions.

Several of the associations point out that their coming meetings will be devoted to discussions regarding the Robinson-Patman Bill. Howard Weddington, secretary and treasurer of the Wholesale Distributors Assn. of Texas, points out that Mr. Wright Patman, co-author of the Robinson-Patman Bill, will speak at their state meeting in Galveston on Sept. 11. The Central Western Credit Exchange of Minneapolis was addressed by Judge Utterback, congressman from Iowa, on the history of the Act, at a conference of their Iowa group in Des Moines on Aug. 19. In reporting on this, D. R. Thomas, manager of the exchange, points out, "There evidently is some confusion between interstate and intrastate commerce and the thought had by some, that as long as they do not sell or buy in interstate commerce, they are immune from the provisions and penalties of the Act, is not correct. Such is not the case because almost every transaction is either in, affected by, or a burden on, interstate commerce, directly or indirectly, and somewhere along the line the interstate feature has appeared, so that there is little comfort for those who think they can do as they please because they are not engaged in interstate commerce. Then, too, a transaction wholly intrastate in itself may be, and usually is, in competition with a transaction which is interstate, so it comes within the provisions of the Act."

Edmund F. Butler, executive secretary of the Plumbing and Heating Wholesalers of New England, Inc., reports that the Robinson-Patman law and the effect on our industry is to be discussed at their convention on Sept. 14.

Legal Opinions

As a further result of the passage of the Robinson-Patman Bill, various legal opinions have been prepared. R. Kennedy Hanson, secretary of the Vitreous China Plumbing Fixtures Assn., has had an opinion prepared and this is presented in the following. It was furnished by Felix H. Levy of the New York Bar. Mr. Hanson states: "In my opinion, this is one of the clearest explanations of the bill I have seen. It was especially prepared for my office." The opinion is as follows:

"The Robinson-Patman Law was approved by the President on June 19, 1936. It constitutes an amendment of a most comprehensive and important nature, to the Clayton Law which was enacted by Congress in 1914.

"This new law was under debate in Congress during 1935 and 1936. In both Houses of Congress it was the subject of countless and conflicting views and suggested amendments. The result is that the new law presents a situation of perplexity and uncertainty, exceeding even the perplexity and uncertainty which followed the enactment of the Clayton Act in 1914.

"Before proceeding to a consideration of the precise particulars in which this new law has changed the prior Clayton Act, it is proper to say that not only are the most qualified experts in this field of the law uncertain as to many features of it, but it is safe to assume that leading law officials of the Government are themselves perplexed and confused.

"Upon this basis, therefore, it is en-

tirely safe to say that no company or firm confronted with questions of immediate change of policy to conform with the new law, ought to act precipitately, or until authoritative opinions are expressed by official sources. This advice is subject to the important qualifications that if any such company or firm is conscious of the fact that its present policy includes practices of a distinctly discriminatory or oppressive character, then immediate attention should be given to a study of the same under the advice of expert counsel, with the view to promptly correcting the same.

"The debates in Congress reveal that the outstanding purpose of the new law was to prevent price discriminations favoring large purchasers at the expense of smaller. These debates revealed that the principal object of attack was chain-stores. Consequently, the new law has been generally designated as the Anti-Chain-Store Law. This fact is of importance in a correct understanding of the philosophy or the meaning and purpose of the new law.

Clayton Act

"Proceeding now to a consideration of the new requirements of the Robinson-Patman Law in contrast with the requirements of the prior Clayton Act, we find that while the Clayton Act permitted price discriminations 'on account of differences in the grade, quality or quantity,'—the new law eliminates the word 'quantity' from this provision and establishes a new and important requirement. This is found not only in the fact that the word 'quantity' has been omitted as above stated, but also because of the Proviso contained in Section 2 (a) of the new law, namely:

> 'that nothing herein contained shall prevent differentials which make only due allowance for differences in the cost of manufacture, sale, or delivery resulting from the differing methods or quantities in which such commodities are to such purchasers sold or delivered.'

Discounts for Quantity

"The objections made in Congress to the former provision permitting discriminations on the basis of quantity, were based on the charge that unjustifiable large discounts were made for very large quantities sold to very large purchasers, such as chain-stores,—quantities so large that smaller purchasers were unable to buy them even with the inducement of the large quantity-discount and that the resultant low prices were not justified solely on the basis of the large quantities involved, but were intended to be, and were in fact intentional discriminations in favor of such large purchasers to the direct detriment of small purchasers.

"Accordingly, the new law changes the situation in this respect and permits quantity discounts only where the same represent only actual differences in the cost of manufacture, sale or delivery resulting from the quantity sold or the method used in making delivery.

"This new situation presents a serious condition because of the inherent difficulty of making a precise determination of the differences in the cost of manufacture and in the expenses of selling and of delivery. Because of this difficulty, serious doubt is being expressed by legal experts as to the legality or the constitutionality of this provision.

Discounts Honestly Made

"For present purposes, it seems advisable that a company or firm confronted with this question, ought not to be precipitate or hasty in changing its present policies, *except* insofar as a condition clearly exists whereby quantity discounts are given to large purchasers to an extent manifestly discriminatory, unfair or oppressive towards or upon smaller purchasers. By this it is meant that where a company or firm has, in good faith, and in the ordinary and customary methods of business, been giving quantity discounts to larger purchasers, and such discounts are made fairly and in good faith in the honest belief upon the part of the seller that such discount fairly represents the saving gained by the seller because of such large quantity,—then there ought to be no precipitate, if indeed any change in such policy.

Federal Trade Commission

"A further and important provision of the new law is that which gives to the Federal Trade Commission the power to establish the maximum limits of the quantities for which discounts may be given. This power is made subject to the requirement that before the

(Continued on Page 106)

Women

Conducted by Dorothy Edwards

Membership Drive

● *National auxiliary changes plan of membership drive*

The women's auxiliary of the national association has changed the plan of awarding prizes in the membership contest from a state basis to one in which individual auxiliaries will participate. In other words, where formerly the auxiliaries in a state group worked to receive a state prize, now individual auxiliaries will work for themselves whether or not they belong to a state division. Also, there will be a prize awarded to the new auxiliary formed during the year which shows the greatest increase in its membership.

Further details are to be found in the Women's section of this issue.

Recognition

Over Radio ... In Newspapers ... Thru Magazines ...

Economy

● *Louisiana paper gives emphatic sales arguments for plumbing modernization*

An effective sales argument in favor of plumbing modernization was contained in an article published by The Times-Picayune New Orleans States recently. This article advocated the installation of modern plumbing fixtures on the basis that, like a new model automobile giving more satisfactory performance, new fixtures guarantee added satisfaction, increased pride in ownership and a more beautiful home. The closing paragraph of this article read as follows:

"With . . . new fixtures, your bathroom could be the source of as much pride as any other room in your home. If it now contains fixtures that actually fit into the 'horse and buggy' age, then you always feel like apologizing for its appearance to your guests."

Further details are to be found in the Trade section of this issue.

Appeal

● *Evidence that crowds want comfort carried to real estate owners and operators*

Buildings and Building Management, a magazine going to owners and managers of real estate, carried a timely article on the benefits of air conditioning in the August issue. This article, accompanied by a photograph, gave tangible evidence of how people respond to air conditioned buildings by showing that an increased number of people entered the air conditioned arcade of the Field Building in Chicago during a recent hot spell than was the ordinary normal daily trend.

Further details are to be found in the Recognition section of this issue.

These pictures show an interior view of Waite Bros. showroom and a portion of the crowd waiting to attend one of the cooking schools

Cooking Schools and Group

Advertisements Push Sales

The lid comes off sales possibilities when the lever of clever, new merchandising methods is once applied

WAITE BROS., Plumbers, 2310 West Vernon Ave., engage in contract plumbing and merchandise sales in a small suburban section of Los Angeles. They have a mighty interesting story to tell. A part of it is as follows:

"When we moved over here, we had to add space to our shop and make room for mechandise displays. The sales on hot water heaters alone in February paid most of the change-over expenses in the shop. The sale of refrigerators during the *winter* months paid for the addition to the building, and more besides. While it is not a high-priced neighborhood, we were eleventh place in Southern California in point of refrigerator sales during the winter months, and had but one outside salesman.

Then early in March along came this cooperative newspaper advertising campaign, which we joined wholeheartedly. It didn't get well under way until March 25. From that date to April 15, we sold eleven modern gas ranges. The surprising part was, that only one out of the eleven was in the lowest price bracket—the other ten averaged $130 apiece—some as high as $162. Owing to the time-payment plan employed, buyers can buy the ones they want—the best, and we get our money promptly."

While this interview was in process, the telephone rang. A lively five minute conversation ensued, and as Mr. Waite hung up the receiver, he smiled a little wider and said "Chalk up another sale for a $130 range." In the last 90 days, Waite Bros. parked $100 worth of pennies in the sales-tax till, being 2½ per cent on the merchandise sales alone.

"There is small romance in selling a water heater," he said, "because a woman buys one only because she's compelled to. But when you sell her a new gas range or a fine refrigerator and she says: 'If this will do just half what you say it will, I'll be well pleased'—and then after she has used it a month or two and she comes in and says: 'That refrigerator is performing twice as well as you said it would,' why, that's romance in selling and certainly we're getting a big kick out of this entirely aside from the profits.

"This cooperative newspaper advertising campaign is creating new demands among home owners, but we have to tie in with it through attractive store displays, and follow up immediately the leads we get through personal contacts.

Our own advertising builds our prestige, then when our workmen are out on a repair job, they can find out exactly what new equipment the housewife needs. She

NOW . . .
3 to 5 Years to Pay
For Your New Automatic
Gas Water Heater
NEW LOW TERMS
$5 down . . . $1.50 a month
And a High Grade Gas Water Heater
Will Be Installed in Your Home
Beginning March 25th quality water heaters may be purchased for as little as $5 down and $1.50 a month.
Why go through another year fretting over an inadequate hot water supply. You can modernize your home now by installing a modern automatic gas water heater. Take advantage of the NEW LOW PURCHASE TERMS.
We are now exhibiting the latest automatic gas water heater models. And, too, they carry the seal of the American Gas Association.
See your Neighborhood Dealer today!
SEE THE FOLLOWING DEALERS AT ONCE FOR FURTHER INFORMATION
BENEDICT & GINGRICH
A. J. SCHAEFER
W. M. MURCHLAND
T. E. DENNY ELECTRIC CO.
M. MORRALL
A. W. McKAY
MUNGER & MUNGER

will talk to a mechanic about those things, when she wouldn't admit a 'dressed-up' salesman. If our man on the job feels he cannot turn the sale, he says: 'I will have my brother come over and talk to you about this equipment, he knows more about it than I do.' Then he calls me, and I go out with my shop uniform on, and wade in and sell her the equipment.

"We get prospects from the food and cooking schools too. Women who attend the schools cannot participate in the prizes unless they sign the ticket with their own name and address, and fill in whether they have an electric refrigerator and how old the gas range is—also the water heater. These stubs are divided between local dealers so that there will be no duplications. The distributors call these names on the 'phone and ask: How did you like our cooking school? Can you make any suggestions for improving it? Et cetera. Then the conversation turns to the equipment, and if the party appears to be a live prospect for a new range or what-not, it is immediately turned over to the dealer to be followed up by a personal call.

ADDED 800 REFRIGERATOR PROSPECTS

"We issue a small card that gives away a free ice-pick to any housewife using an ice refrigerator. This affords an entree, and the salesman can talk to her about a new refrigerator. In the past winter, we have added more than 800 refrigerator prospects to our list, and with the results of sales as recorded above.

"Advertising and store displays are the first two essentials, but the next, if not equally important step is to continue to make home contacts with prospects on our list. We now have three salesmen employed—two college graduates and one older man. You might think the young fellows would get the farthest in this sort of program, but the older man is turning in the most sales.

"We need our plumbing and repair contacts for the profit there is in that end of the business, but if there was no profit in it at all, we would continue it for the sales contacts it provides for gas ranges, water heaters, refrigerators, small accessories and last, but not least, the installation of new bathroom equipment, change-overs and the like."

The Gettman Plumbing Company, 5250 South Broadway, another dealer participating in the cooperative ad-

The type of cooperative advertising that is shown on this page lists the names of those contractor-dealers who sell and service the merchandise which is offered in the advertisement. Below is a picture taken of a demonstration on the stage of a cooking school

Above is a view of the audience at a cooking school. At the right are sample advertisements such as are used by contractor-dealers at an average cost per dealer of less than $10.00 for each advertisement. The distributors cooperating shared the expense

vertising program, had a very small front space used for a work office. They moved the partition back several feet, painted the room an attractive color, and now have space approximately 15 ft. by 20 ft. for displaying a modern gas range, two or three water heaters, a refrigerator and several small room heaters. It is beautifully and attractively set up in this small space. From March 25 to April 15, they sold ten new gas ranges, and, as in the above instance, the prices were in the higher brackets for ranges sold.

The Dan Kohn Plumbing Company, 1933 East First St., in the vicinity of a mail order company's main store, has this splendid bit of information: "Since the cooperative advertising program started in March it has more than doubled my sales. I sold eight gas ranges in two weeks, none less than $100. The cheapest one I carry in stock is $85. Yesterday, March 16, I sold three refrigerators. Two of them were $273 machines. Two were sold for cash, and one was financed on the time payment plan. I have doubled my sales of washers.

FIVE OUT OF EVERY SIX

Out of every six water heaters sold, five are above the $50 figure to one at $28. This is a community of factory workers and I have not yet had to repossess any equipment I have sold in my community on the time payment plan." One of the leading points Mr. Kohn uses to promote the sale of this high grade home equipment is that the quality must be right, or the distributors financing these sales would not and could not sell them on the time terms as long as five years to those who wish to buy on that basis. Then, through the demonstration, it is easy to point out the superior and additional features combined in the higher price brackets. While the interest charges are only 6 per cent per annum, provision is made for rebating interest if the accounts are paid before final due dates. No handling charge is made either, when customer anticipates payment.

G. W. Romo Plumbing Service, with two stores, who have participated in this cooperative advertising program, pronounce it as an outstanding advancement in merchandising, not only as a measure to divert the sale of much profitable merchandise into the independent dealer trade channels but as a means of creating further

(Continued on Page 177)

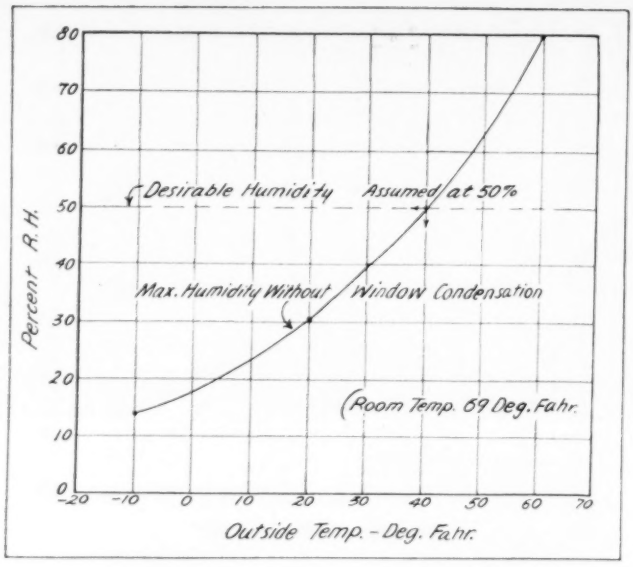


Fig. 1—Showing the percentage of relative humidity at which condensation begins with a room temperature of 69 deg. Fahr.

Do You Know
How Much

Research makes available the definite limits which have been set up and within which humidifiers have the proper capacity to operate during the winter months

MANY of our readers have been inquiring about residence humidifying during the winter season. It is the aim of this article to set up what may be expected in the ordinary residence with the idea that it may serve as a guide in carrying on this type of work.

With the amount of research, experiment and knowledge now available in regard to air conditioning in general it seems that some definite limits should be possible within which a humidifier could safely be said to have a capacity to humidify properly under ordinary winter conditions such as exist in the common and garden type of house.

TABLE I

Based on Room Temperature of 69 deg. Fahr. and 106.9 grains per lb. in saturated air.

Outside Temperature Deg. Fahr.	Room Temperature Deg. Fahr.	Sat. Grs. per Lb.	Allowable Per Cent	Room Air Grs. per Lb.
-10	69	106.9	14	14.9
0	69	106.9	18	19.2
10	69	106.9	23	24.6
20	69	106.9	30	32.0
30	69	106.9	39	41.7
40	69	106.9	50	53.4
50	69	106.9	*50	53.4
60	69	106.9	*50	53.4

*No farther increase in relative humidity in the room after it has reached 50 per cent even though such increase is allowable.

While there is some difference of opinion on the subject, a relative humidity of approximately 50 per cent, if not slightly higher, may be assumed as representing today the percentage of humidity generally regarded as desirable during the cold months. Unfortunately, this desirable degree—even if the low amount of 50 per cent is assumed—cannot be maintained during very low outside temperatures without frosting the windows or without causing condensation, or steaming, until an outside temperature of around 40 deg. Fahr. is reached. This is illustrated plainly by the curve shown in Fig. 1 where the percentage of relative humidity at which condensation begins with a room temperature at 69 deg. Fahr. is shown for any outside temperature from 10 deg. Fahr. below zero up to 60 deg. Fahr. above zero. It will be seen from the curve that at 30 deg. Fahr. outside the relative humidity in the room cannot exceed 39 per cent, at 20 deg. Fahr. it cannot exceed 30 per cent, at 10 deg. Fahr. it cannot exceed 23 per cent and at zero it cannot exceed 18 per cent. As this curve is plotted as the result of actual tests it may be taken as fairly reliable.

TABLE II

Outside Temperature Deg. Fahr.	Saturated Air Grs. per Lb.	Relative Humidity Per Cent	Grains Brought in per Lb. of Air
-10	4.04	50	2.02
0	5.46	50	2.73
10	9.16	50	4.58
20	15.00	50	7.50
30	24.00	50	12.00
40	36.4	50	18.2
50	53.4	50	26.7
60	77.4	50	38.7

The next step is to take these percentages and reduce them to actual grains of moisture per pound of air in the room which may be done by taking the number of grains of moisture in a pound of 69 deg. Fahr. air saturated and multiplying this number of grains by the allowable percentage of relative humidity permitted thus obtaining the number of grains of moisture contained as maximum in each pound of room air without precipitation on the window glass. After the room condition has reached 50 per cent relative humidity—which it does at 40 deg Fahr. outside—no farther addition to the relative

Humidity Is Needed for the Average Residence?

humidity is considered (even though such an addition would be permissible on the condensation basis) as it is thought that any increase beyond 50 per cent relative humidity is unwarranted. This has been computed in Table I. The absolute humidity of the room air in grains per pound of air is given in the extreme right hand column.

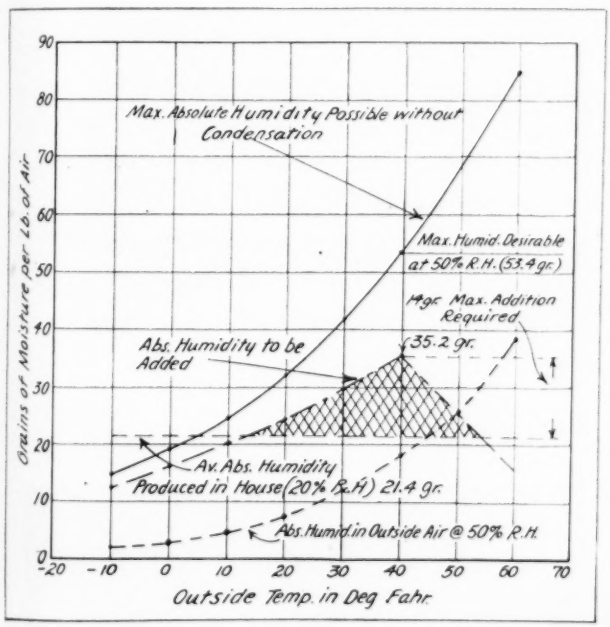

Max. Absolute Humidity Possible without Condensation
Max. Humid. Desirable at 50% R.H. (53.4 gr.)
14 gr. Max. Addition Required
35.2 gr.
Abs. Humidity to be Added
Av. Abs. Humidity Produced in House (20% R.H.) 21.4 gr.
Abs. Humid. in Outside Air @ 50% R.H.
Grains of Moisture per Lb. of Air
Outside Temp. in Deg Fahr.

Fig. 2—The topmost curve represents the maximum absolute humidity in grains per pound which can be maintained without condensation

The moisture to be added to the air in the room evidently must be the *difference* between the absolute humidity of the outside air filtering into the house and that absolute humidity required in the house to meet conditions which will not produce condensation *less* whatever moisture is added in the house from any source of moisture within the enclosure. The outside air not only contains a differing number of grains at saturation for various outside temperatures but also has a varying relative humidity. For the purpose of this discussion it will be assumed that the average outside relative humidity is around 50 per cent and with this assumed, it is possible to determine the average number of grains per pound brought in by outside air under any condition of outside temperature by multiplying the number of grains contained in the air saturated at that temperature by 50 per cent as is shown in Table II. The first column shows the outside temperature, the second the grains per pound of air when saturated at that temperature, the third column the 50 per cent average relative humidity assumed and the last column the number of grains per pound of air brought into the room under this condition.

There must be some allowance, however, for moisture generated or produced in the house and this is an exceedingly variable item. Usually it seems in a residence where no unusual moisture production is going on, such as a family washing, that frost begins to appear on the win-

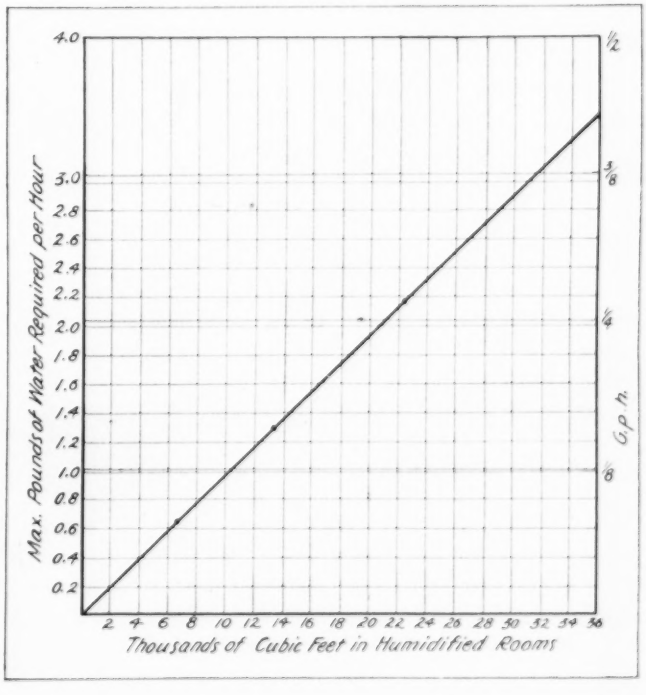


Fig. 3—This curve gives the approximate amount of water required per hour for cubic feet of space in pounds per hour or gallons

dows when the outside temperature approaches zero; if this is assumed to occur at about 5 deg. Fahr. above zero —or to begin to show at about this temperature—it will be seen by referring to Fig. 1 that this is equivalent to a relative inside humidity of about 20 per cent. Therefore, for the purpose of this problem it will be assumed that the average residence produces within itself a sufficient amount of moisture to raise the inside relative humidity to around 20 per cent when the outside temperature is 5 deg. Fahr. above zero or less. As the 69 deg. Fahr. air in the room contains saturated 106.9 grains per lb., with 20 per cent relative humidity the absolute humidity in the room will be 106.9 grs. multiplied by 20 per cent or 21.4 grs.

TABLE III

House Type	Infiltration Cu. Ft.	per Hour Lb.	Moisture Added to Gr. per Lb.	Infiltered Air Total Lb.
Bungalow	8,440	650	14	0.65
Small House	16,880	1,300	14	1.30
Large House	28,125	2,163	14	2.16

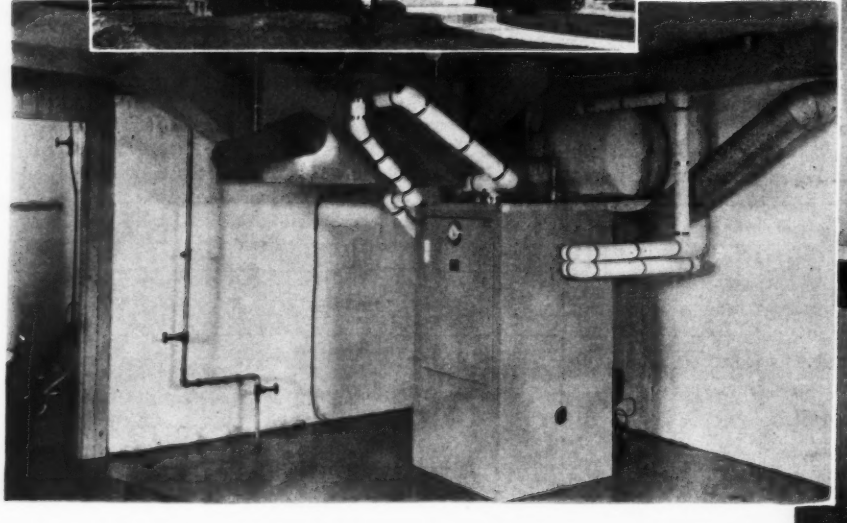
Curves for this information may be found plotted in Fig. 2 where the topmost curve represents the maximum absolute humidity in grains per pound which can be maintained in the room without condensation. This curve has a horizontal branch at 53.4 grains which represents 50 per cent relative humidity at 69 deg. Fahr. and beyond which it is not necessary to further humidify the room. The lowest curve shows the absolute humidity in the outside air when assumed at 50 per cent relative humidity while a horizontal line at 21.4 grains indicates the amount of moisture or absolute humidity in the house without any source of artificial humidifying. The line running between the upper and lower curves represents the difference in grains per pound of air between the maximum which can be carried in the house as represented by the top curve and the amount brought in by the outside air as represented by the bottom curve and it will be seen that this amount reaches a peak at 40 deg. Fahr. outside.

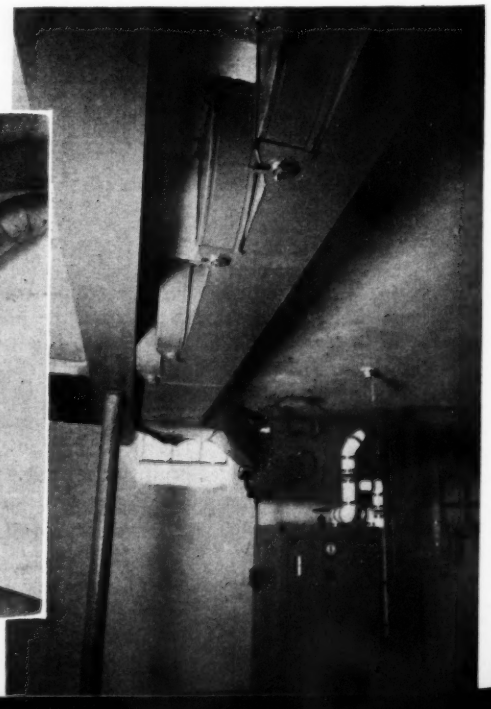
Inspection of the curves also shows that the greatest amount of humidity to be added in grains per pound of air occurs at 40 deg. Fahr. outside temperature when the number of grains to be added amounts to 35.2 grains per pound omitting consideration, for the minute, of the amount of moisture generated in the house itself. The horizontal line at 21.4 grains represents the amount of moisture added by the house and it is evident that the artificial humidification added will only and can only add

(Continued on Page 178)

100 Homes

The houses shown in the three illustrations here are representative of more than 100 homes now under construction in all parts of the country designed to bring year 'round air conditioned comfort to families of moderate sized incomes





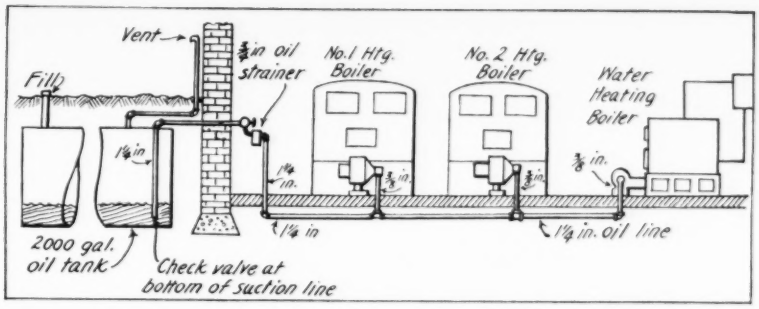


Fig. 1—The feed line was continued full size to the burner

Oil Burner Service Job

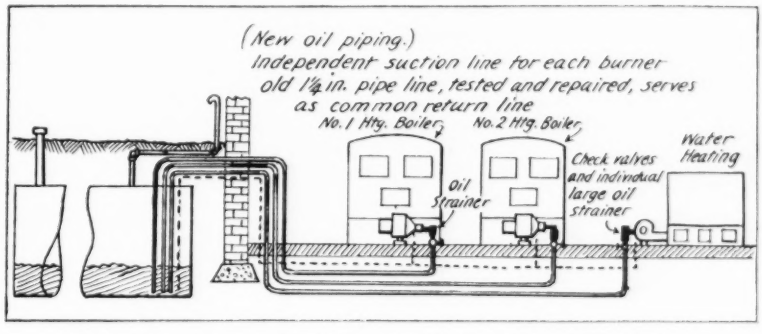

(New oil piping.)
Independent suction line for each burner
old 1¼ in. pipe line, tested and repaired, serves as common return line
No. 1 Htg. Boiler
No. 2 Htg. Boiler
Water Heating
Check valves and individual large oil strainer
Oil Strainer

Fig. 2—A one-piece suction line was installed to eliminate air binding

The fundamental principles are the same in domestic installations as they are in the one that is described here

By George E. Clark

APARTMENT house installations of the type described are not included in the everyday work of most contractor-dealers handling oil burners. However, the fundamental principles and errors abide just as well in domestic installations. The behavior of a standard pressure type burner is much the same whether it fires two or ten gallons of oil per hour, therefore the corrections applied successfully to this job should serve as a guide in avoiding similar problems in both residence and apartment installations.

Details of the installation as it was made, with special attention to the factors that caused poor heating for five years, are shown in the accompanying sketches.

The feed line for the burners, shown in Fig. 1, consisted of a 1¼ in. pipe continued full size to the burner which was installed to heat water. One ¾ in. oil strainer of the 100 mesh type, with about 20 sq. in. of straining area, served all three burners. Branches feeding each burner were ⅜ in. in size. Each was fitted with a shut-off valve and a ball check valve.

The burners were connected so as to use this one-pipe supply system; that is, the outlet of the pressure regulating valve of each burner was connected to the inlet of the oil pump by means of a recirculating loop.

Fig. 3 shows the firebox used in each of the heating boilers. Notice that it was as long as the boilers permitted, namely, 58 in., and as high as the ashpit (14 in. was the inside height of the side walls). Incidentally, many leaks between the boiler sections permitted hot gases to travel to the smoke domes by short cuts; these are shown as A, B, and C in Fig. 3. Additional air leaks between the ashpit and the bottoms of sections permitted uncontrolled air to enter the fireboxes. Besides, the flue doors of the boilers did not fit tightly, and the one who made the original installation had taken no pains to seal them. With the three boilers operating in winter, the chimney draft became high enough to extinguish the flame of a candle held at the joint between the sections and the ashpits.

So much for the description of the burner installation. Now follows an outline of the troubles that for five years marred the record of the installation.

The owner complained most about interruptions in heating. These occurred for two reasons: first, because the burners lost prime; second, because of ignition failure. Trouble because of lost prime became a routine item. The owner would telephone an SOS because of no heat, and a service man would come and let air out of the pumps on the burners. Then the job would operate satisfactorily for perhaps two days or two weeks before losing prime again. It got so that the dealer didn't charge for all of these service calls, but even then the owner some-

times berated him over the telephone. Once the dealer brought an outside engineer to the installation. It seemed as though a remedy was in the offing, but after testing each pump with a vacuum gauge, looking at check valves, and conducting an air pressure test on the oil lines, the engineer and the dealer agreed that the job could not lose its prime because it was perfect. The burners ran perfectly for one week, then one of them stopped because of lost prime. While the difficulty with lost prime affected all three burners, only the two burners in the heating boilers were affected by ignition failure. This trouble occurred, according to the owner, only once or twice a heating season, but it disturbed him more than the trouble of losing prime because the burner affected didn't "just plain stop; it always did something bad." On one occasion a burner started when the ignition system was defective, and a cloud of atomized oil squirted into the firebox for a few seconds, then was lighted by bricks still hot from a previous burner operation. The dealer called

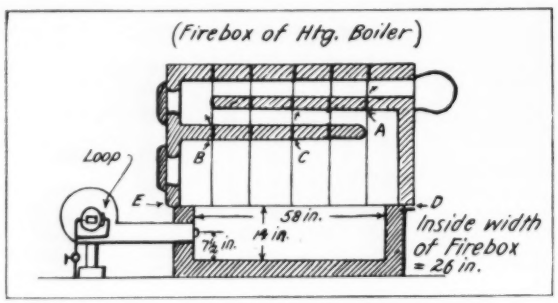


Fig. 3—This shows the firebox which was used in each of the heating boilers

the result a puff, but the owner said puff was a mild name for it because it broke two flue doors by swinging them open violently, loosened the smokepipe, and awakened tenants on the first floor.

The puffs were due to iginition failure, and the ignition failure seemed to result from the lost prime trouble in this way: There was some fluffy carbon in the boilers, due to the firebox construction and because of uncontrolled air cooling the flame. A burner about to lose its prime, or barely able to expel accumulated air from its pump, would operate with a spasmodic, pulsating flame. This would cause a sudden expansion of the gases in the firebox, loosen the fluffy carbon, and deposit some of it on the ignition assembly in the draft pipe of the burner. After a certain amount of soot was deposited on the porcelain insulators holding the electrodes, the ignition system would be short-circuited and fail to work the next time the burner started.

While the owner would have been content to have the troubles just described remedied, he was also wistfully desirous of improved operation in several other respects. Radiators heated too slowly to give satisfactory heat on sub-zero mornings. Even though the burners operated continuously for five to six hours, the heating boilers showed no steam pressure. The boilers required cleaning less frequently than with hand fired coal, but more frequently than they should with oil. While labor savings effected through installing the oil burners had saved considerable money each year, the owner had been promised there would be further economies with oil. Yet the fuel bills were running about the same as with coal, and the owner wondered whether or not to suspect unnecessary inefficiencies.

The contractor-dealer who took over the responsibility of the installation last fall decided that the elimination of breakdowns was the primary consideration. To eliminate air-binding of oil pumps, he installed a one-piece ⅜ in. tubing suction line for each burner, as shown in Fig. 2. The use of special suction line fittings permitted running these through the top of the oil storage tank without piecing. Knowing that one-pipe hookups are more apt to air-bind that two-pipe hookups, especially with outside tanks, he used the 1¼ in. pipe line originally installed, as a common return line for the three burners. After making these changes he tested each pump for its ability to pull suction line vacuums. They performed well, pulling maximum vacuums of 25 in., 25 in., and 27 in., respectively, when flooded with oil.

Experienced engineers agree that the above precautions will cure loss-of-prime trouble on similar installations. Indeed, the past winter's experience indicated as much on this job, for not once did a burner lose its prime, and on one occasion when the oil supply was exhausted, the owner, himself, restarted the burners merely by pressing the recycling buttons on the control panels.

FIREBOXES REBUILT

To attain higher combustion efficiencies and cleaner burning, the dealer rebuilt the fireboxes in the two heating boilers after the plan shown in Fig. 4. Although he figured on using eight gallon per hour nozzles, instead of the six gallon per hour nozzles found in the burners, he shortened the boxes to 40 in. to increase the temperature and turbulence of the fires. For the same reason he increased the height of the nozzle and the side walls, and built a corbel on the back wall.

An important step in improving efficiencies was to seal all the air leaks mentioned in the discussion of Fig. 2.

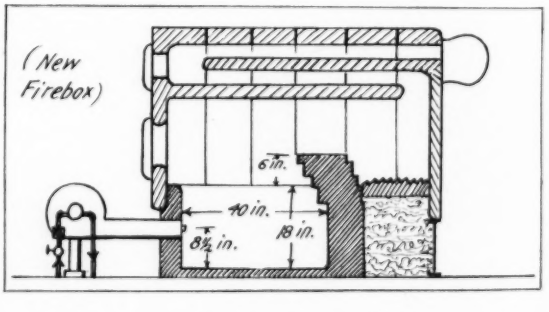


Fig. 4—The fireboxes in the two heating boilers were rebuilt to attain higher combustion efficiency

Great care was used in sealing leaks between sections to eliminate the short-circuiting of the flue gases. The use of the higher firebox walls made it easier to seal permanently the leaks between the bottoms of sections and the ashpit. Not content with sealing thoroughly the air

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"SALES COME...

When I Go Out and Get Them"

Here is a contractor who makes use of the personal method of contact in making sales with great success

A SUCCESSFUL merchant once remarked that he made his money while others slept. After others closed their shops, he developed the plans that brought him success. Many people will say that such success recipes should be taken at a discount. Maybe so, but after learning of Zimmerman's methods one is inclined to believe that there may be some foundation for such success recipes, after all.

The Allentown Plumbing and Heating Co., which Thomas Zimmerman owns and manages, is not hoary with age, having been established in Allentown, Pa., only eleven years ago.

In local circles it is said that Zimmerman doesn't advertise. That is only a half truth, for he does advertise most effectively, but not in newspapers. He prefers the personal contact method, selecting his projects and then aims at those instead of scattering his business building and sales shots.

Following this plan to contact his prospects personally resulted in the sale of thirty-two boilers on remodeling jobs during the spring and summer season, in addition to a large volume of general heating and plumbing business during this period.

Ordinarily it is not difficult to locate a contractor after business hours. Not so with this man. It took six successive calls on as many evenings to find him at his home, which adjoins his shop and store. He apologized for his absence, but remarked that he had been out after some "hot prospects."

When he was told that good prospects were reported to be rather scarce under present conditions, he replied:

"I wouldn't say that there is any scarcity of prospects, but it does take a lot of convincing sales talk to make them sign contracts these days. People are inclined to hesitate a long time before they buy. The thing that makes them decide to have a new heating boiler is the conviction that they need the boiler more than the money."

During the past few years Zimmerman has been stressing the sale of automatic heating, and most of his installations are of this type. He is thoroughly sold on the economy and efficiency of this equipment and is able to impart his enthusiasm to the customer, which is one reason for his success in selling remodeling jobs.

"There are many ways of finding prospects," he explained. "Some come to the store to talk about their

T. E. Zimmerman is pictured here in the show room of his establishment known as Allentown Plumbing and Heating Co.

heating problems. I find others through conversations with friends and acquaintances. Real estate connections are a good source. Then the newspapers and building permits contain leads that can be sifted down until the prospects alone remain. It isn't difficult, but it does take time and attention."

He then went on to say that most of the large and profitable jobs are sold in the evening, after the shop is closed for the day.

"I'd rather call on my customers in the evening than during the day," he continued. "As a rule they are at home after supper and aren't in such a hurry as they are during the day. The evening hours don't seem so valuable to them, which gives me enough time to tell my story.

THREE OR FOUR CALLS AN EVENING

"Most every evening I am out with a list of prospects in my pocket, and sometimes I can manage to call on three or four of them in a single evening. I'm too busy to do much selling during the day, because I usually superintend the work of my men."

Zimmerman has been forging ahead, even during the past few years when others have been unable to show progress. Recently he purchased property having three times the shop space he formerly occupied.

Among the wholesale supply houses in this district he is known as a live wire, a man with that elusive quality commonly known as business-getting ability. One of these wholesalers confided that "when Zimmerman goes for a job, the odds are in his favor. He doesn't use high-pressure methods, doesn't try to cut the throats of his competitors, but just plugs away until he has the confidence of his prospect."

This was verified by Zimmerman when it was suggested that lowering of prices might be resorted to as a means of developing volume business. He shook his head.

"It wouldn't get us anywhere. Besides, we are not in a position to use price arguments to develop business, especially on heating equipment. The type of installations which we recommend to our customers cannot be sold at the prices quoted for common work. On most contracts our prices are higher than those of competitors. The reason we get the jobs is because the customers believe we are giving them better value for the money they spend.

"Some people tell us that it's good salesmanship, but from my point of view it is more than that. The profit from a sale means pretty much to any contractor, but the confidence on which that sale was built is the foundation for future business. I never promise things for my equipment that I do not honestly believe are true."

Just then a belated customer, for whom Zimmerman had recently installed a new boiler, entered the shop and told him that the hot water tank connected with the kitchen range had sprung a leak. "Can it be fixed?" he asked.

"Is it leaking at the seam?" asked Zimmerman.

"Yes, near the bottom."

"Well, if it isn't too old and rusty it probably can be repaired, but I doubt if it will last long because a leak at the seam is not easy to repair satisfactorily."

"How much will a new tank cost?"

"I can sell you a good tank, install it, and I will guarantee it. You can buy tanks for maybe half the price, but I wouldn't care to sell you that kind. I'd rather keep you for a customer."

Arrangements were made to install the tank the following day. After the customer left, he expressed his philosophy in the following words: "It pays to tell the truth. I lose sales sometimes because I refuse to sell something I cannot recommend. Even so, I'd rather lose a sale than lose my reputation for honesty and fair dealing."

He makes every effort to please his customers and that is why he continues to sell to them time and again. There is no end to the things that are needed in most homes, and he thinks of them all, proves to the customer that modernization is a continuous process.

Take, for instance, shower shields and shower doors. He has sold a remarkably large number of these items simply because he has been showing his customers how the old-style equipment is obsolete.

"You'd be surprised," he remarked, "how few people there are who know anything about this modern development in showerbath enclosures. We had the plumbing and heating contract for two large homes, completed recently. Both of these builders had planned old type shower accessories. It didn't take any selling when I showed them pictures of the new types of showers. In fact, after that they wouldn't have considered the older types as a gift."

Selling, according to Zimmerman, is more a matter of proper suggestions than trying to make people purchase something. He shows his customers how to modernize, lets them visualize the benefits they will derive, and then allows them to buy.

SALES POSSIBILITIES IN FOLLOW-UPS

A completed job doesn't mean that he is through with that customer. No, indeed. He can run over his list of accounts and he can't point out one home that is as completely equipped as he would like to have it. There is no end to the sales possibilities in following up old customers.

"Here," he will say, pointing to an address on his ledger, "is a home with one bathroom; old style fixtures, no shower. There's a large family in that home and there should be two bathrooms with at least one shower."

That idea keeps on growing in his thoughts until he can no longer resist the temptation to paint a verbal picture of modern bathrooms to the listening prospect. Some evening he calls on the prospect, casual like, of course, and begins to explain the idea that has been bothering him.

Just wants to get it off his mind. After the seed of modernization has been sown, he leaves. But the family goes into a huddle. The youngsters are all for the new idea. Many of their friends have these modern conveniences in their homes, so why shouldn't they have the same. That idea surely put dad in a mess of trouble.

Zimmerman waits a week or two, then he'll drop in again and ask what the folks think of his idea.

"Great," say the young folks.

"Afraid it'll cost too much," replies dad. "Where

(Continued on Page 180)

Merchandising Counsel

SOME copy is prepared by the Merchandising Counselor and a speech is prepared by one of our readers

THIS month we are glad to be able to reproduce two pieces of copy prepared by us for readers. The first of these pieces of copy we prepared in response to a request from George A. Schuler of Allentown, Pa. It was Mr. Schuler's desire to have something which he could leave with home owners where he had cleaned the heating plant. During the spring of 1935, Mr. Schuler had made a strong drive for cleaning jobs and had secured a number of them.

In describing this drive, Mr. Schuler said: "My principle reason for going after this business is to get into the home and make new contacts with the hope of procuring plumbing and heating and oil burner business. Can you suggest some kind of advertising matter to be left in the home for future reference to remind the owner by whom and when the heating equipment was cleaned?"

Merchandising experts have always stressed the value of some sort of contact with the customer after the sale has been made, the installation completed, or the service rendered. The card which we prepared for Mr. Schuler is reproduced herewith. Note that there is a line for him to write in the date when the heating plant is cleaned and also a line at the bottom to suggest when he should be called to clean it again. The card was printed in two colors, black and red, the color being in the hands and the two rules above and below the hands. The telephone number was also run in color. Two holes have been punched at either end of the card as shown, with protecting eyelets, so that the card will not tear when fastened up.

The second piece of copy was prepared for S. E. Davis, plumbing and heating contractor of Baltimore, Md. Mr. Davis had reserved the back cover of a nicely-printed directory called the "Roland Park Blue Book." This book circulates in an exclusive residential district of Baltimore and the specifications for the copy were that it must stress the quick and convenient repair service Mr. Davis is able to offer.

From time to time we have offered readers suggested material for talks to be delivered before Rotary, Kiwanis, and other similar civic organizations. Among the users of this material was Bernard Soll of Brooklyn, N. Y. Mr. Soll had requested that we send him talks on both plumbing and heating and he had also made use of one of the J. Brown Jones' feature articles on the subject of "Luxurious Hot Water."

Mr. Soll tells us that he had the occasion to address a group of tax payers and used these three pieces of material. In commenting on them, Mr. Soll said: "The talks were both educational and very interesting, both for the group of people assembled and myself, and more than anything else, beneficial to my business."

FOR SPEECH-MAKERS

However, we do not want to lay claim to writing all of the speeches and, in fact, reproduce below a very good example of what can be done along these lines as prepared by P. H. Foster, manager, Hudson Bay Plumbing Co., of Flin Flon, Manitoba, Can. In the belief that this material may be of help to others of the industry, we reproduce it in full:

President Ernie and Fellow Rotarians:

"In order to bring about a better understanding between the plumber and the public that he serves I have decided to say a few words in describing the work he is doing. Few people realize how much they owe to the plumber. That statement is not intended as a hint to those whose accounts are overdue. I mean to say that without plumbing, where would we be? There would be no water systems; no heating systems; no drainage facilities. What a life! Look at the Ethiopians for instance; their plumbing arrangements can be said to be practically non-existent, and look at them—black as the ace of spades.

"I have often been asked the meaning of the word 'plumber,' or 'plumbing contractor-dealer,' as he is com-

monly called. A plumber is an independent business man directly in touch with the people of his community and energetic in the furtherance of his own interests and those of the community of which he is part. The man who has a ready laugh for the thoughtless cartoon which depends for its points on the threadbare idea of the plumbing contractor forgetting his tools may read this definition and pass it up as something inspired by a convention of plumbing contractors. On the contrary it is a definition that could come only from a study into the character of the average man making up this industry. The type of service he is called upon to render is of such a nature that there can be only one consideration, and that is the health, safety, comfort, and satisfaction of the people whom he serves. Plumbing contractors have not been handed a job through the independent assertion of their abilities. They have obtained for themselves a position of prominence and indispensability, the maintenance of which position can only come through their continuing to justify their existence through service.

"Probably no industry can record any more extreme changes in the character of the service it is called upon to perform than the plumbing and heating industry. Probably no industry has been more subject to encroachments of other industries than has this industry. Through all this the business men comprising the contracting branch of plumbing have adapted themselves to changing conditions both technical and economic, and have justified their further existence and growth through the increasingly high character of the services they have set themselves to perform. The plumbing contractor is directly in touch with the people of his community. The complexity of plumbing is such that the average individual does not hope to understand it, with a result that in times of emergency the plumber is the first one thought of. Have you ever stopped on Main Street and seen Hendy rushing by with his cap at a forty-five degree angle and his brow all furrowed? It is not the Christmas mail rush that is bothering him. It is a ten to one bet that his basement's flooded. Have you ever heard Pat burning up the telephone wires at some such hour as six in the morning when all reasonable people are in bed? Probably that is another job for the plumber.

"Is it necessary to ask, or do the great number of people today understand all the duties of a plumber and how they started and advanced? The word 'plumber' is taken from the Latin word 'plumbum,' which means lead and the word plumber refers to one who works with lead. The industry started with the invention of pipe, and we must therefore deal with the latter. Piping is transportation, the moving or conveying of a liquid gas or substance from one place to another by means of tubes. Men have long used basic principles in nature without knowing anything that the law involved. Consequently the savage made use of the principle of a tubular conveyor when

(Continued on Page 183)

On This Date We Cleaned Your Heating Plant
GEO. A. SCHULER
428 NORTH EIGHTH STREET
TELEPHONE 2-5174
Use Our "Shop At Your Door Service" for all Plumbing, Heating, Sewage or Oil Burner Troubles. It's One Call Service.
It Should Be Cleaned Again Not Later Than

Card designed to be tacked up after heating plant has been cleaned, showing date cleaned and date for recall for service. Note eyelets to protect card

PLUMBING
25 YEARS OF PLUMBING AND HEATING SERVICE IN ROLAND PARK HOMES WENT INTO EQUIPPING THIS SERVICE TRUCK
That's why we can make any plumbing or heating repair in your home on one call—we know what to expect, and are prepared
Just phone UNiversity 2458
The repair will be made quickly without fuss or muss, inexpensively
Night calls CHesapeake 3191
S. E. DAVIS
902 W. 36th Street
NEW WORK REMODELING REPAIRS

This ad appears on the back page of a directory for a fine residential section of Baltimore, Md., showing how years of service prepare the Davis organization for prompt work

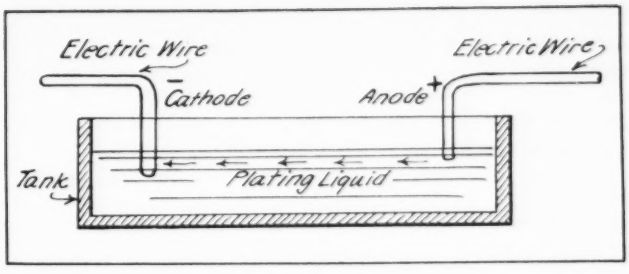

Fig. 1—The current decomposes the metal on the anode and carries it to the cathode

Electrolysis—What Is It?

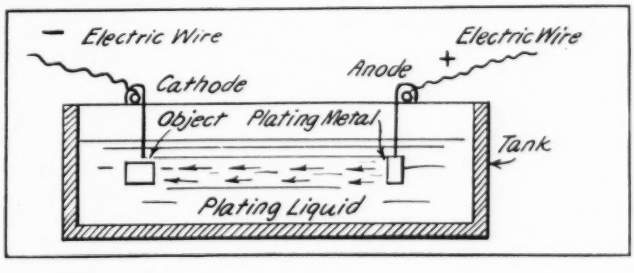

Fig. 2—Metal used in plating is dissolved by the current and is deposited on the object to be plated

ELECTROLYSIS is defined in the dictionary as "chemical decomposition by the action of electric current" and, of course, refers particularly to metals which are acted upon in this manner. Its action is very similar to that secured in the electro-plating process where the ends of a positive and negative wire are hung in a solution and the current passes from the positive end—called the anode—to the negative end—called the cathode. The action of this current is to decompose the metal on the anode and to carry it over and deposit the same metal on the cathode as shown in Fig. 1.

In order to electro-plate the end of the wire is not dipped in the solution but, instead, the metal to be plated on the object is attached to the anode and the metal is suspended in the solution, while the object to be plated is connected on the cathode and is in turn also suspended in the water; see Fig. 2. The action now becomes that the metal to be plated is dissolved by the passage of the electric current and is deposited on the object to be plated. The heaviness of the plating—or, in other words, the thickness of the plating—is determined by the length of time that the process is kept up and the transfer of metal will continue as long as the metal lasts and as long as the flow of current is maintained.

It has been found that the process is dependent largely on the amount of current or amperes while the voltage has little effect; for this reason most electroplating is done with large currents at low voltage and it would take approximately twice as much current to do the same amount of plating at 110 volts as it would at 55 volts and four times as much current as at 28 volts. This is because the quantity of electrical energy used is expressed in *watts* and watts is a product of the volts times the amperes, which is another way of saying the pressure times the quantity of current. Thus the watts, or amount of electrical energy used for plating, where a current of 10 amperes, for example, is desired at the different voltages would be

10 amp. × 110 volts or 1,100 watts
or
10 amp. × 55 volts or 550 watts
or
10 amp. × 28 volts or 280 watts

and this makes it very plain why large currents at low voltage are desirable as

10 amp. × 110 volts gives 1,100 watts
and
20 amp. × 55 volts gives 1,100 watts
and
40 amp. × 28 volts gives 1,120 watts

From the above it will be seen that for economy in electric current consumption the lowest voltage which will do the work is desirable as, with this lowest voltage, the greatest amount of current flow may be obtained with the minimum power consumption.

With this in mind, the cause of electrolysis is much clarified for it is evident that, if any pipe is acting as a conductor for electric current, the point where the current leaves the pipe will be liable to be disintegrated by the current action in exactly the same manner as is secured in the process of electro-plating. Thus, in the case of a street water main passing under the trolley

tracks and connected to other street water mains running back toward the generators in the power house, the current is likely to jump from the rail to the pipe and go back to the generator via this route which has, perhaps, somewhat less resistance than the return circuit via the trolley rails. This is illustrated in Fig. 5.

It is not necessary for the pipe circuit, however, to have a lesser resistance than the trolley rail as the current flow will be inversely proportional to the resistance of each circuit and, if the resistance to the electric flow through the pipe were—for example—three times as high as that of the trolley rail circuit, then the current would flow in the ratio of three times as much through the trolley rail as there was through the pipe. An anology to this may be seen in the case of a 4 in. water pipe breaking up into a 3 in. and a 2 in. pipe but uniting again later into a 4 in. pipe. Water would flow through

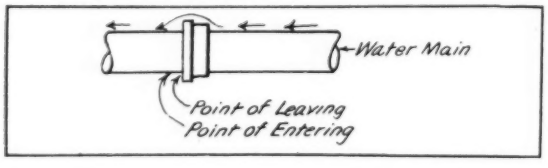

Fig. 3—Showing how a poor connection may result from various causes

both the 2 in., and the 3 in. pipe but in inverse proportion to the resistances of the two lines. The point we are trying to make is that water would flow in *both* lines just as current flows in both the rail and the pipe back to the generator where it unites again and enters the generator.

In traveling along the water pipe, however, there is the matter of joints to consider—something that did not enter into the electro-plating matter—and it is a peculiar fact that, where the current strikes a joint which is not a good conductor, it may have to jump across the joint and this produces a miniature electroplating process right at the joint causing the metal to be taken off from the pipe where the current leaves and to be deposited onto the pipe next along the line where the current comes back into the pipe again. This may occur at only one joint or it may occur at several. The poor connection between pipes may be caused by the oakum used in the joint, by paint between the lead and the pipe and from various other causes; all that is necessary is for the poor connection (electrically) to exist. This is illustrated in Fig. 3.

The places where electrolysis is most likely to show up is on the street water mains owing to their running in every street and almost invariably extending back toward the power house. This is accentuated by the fact that usually there is a higher voltage used in street railway systems than there is inside of buildings. But, says someone, I thought that the voltage was immaterial and only the amount of current was the dangerous factor.

AMOUNT OF CURRENT FLOWING

This is quite true, however, with varying resistances to be overcome by the current in its return to the power house generators, the amount of current flowing will be determined by the voltage as a 500 volt current will cause a considerably larger current to flow through a given resistance that a 110 volt current would under exactly the same conditions.

The amount of current flowing is represented by the following relation:

Volts/Resistance equals Amperes

from which it is evident that with a constant resistance, the amperes flowing will be entirely dependent on the voltage and will vary directly with the voltage. Therefore, where currents at comparatively high voltage are floating around, electrolysis may be much more liable and, if it exists at all, it will have the effect much intensified by the heavier currents.

All of the foregoing has been said with direct current in mind; the trolley systems are nearly all of direct current propulsion and at comparatively high voltage and are frequently the cause of electrolysis. Let the matter of alternating current now be considered. If we go back to the electro-plating process again, it will be seen that if the article plated, after the plating has been deposited thereon, should have the wiring reversed so as to become the anode while the plating metal becomes the cathode, then the plating will be dissolved and carried back to the original metal as shown in Fig. 4. If the object is of metal, this also will be dissolved, if the process is

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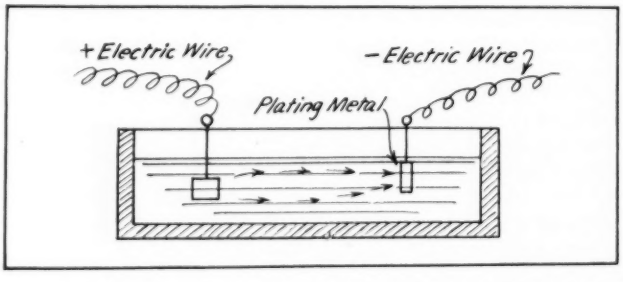


Fig. 4—If the wiring is reversed then the plating will be dissolved

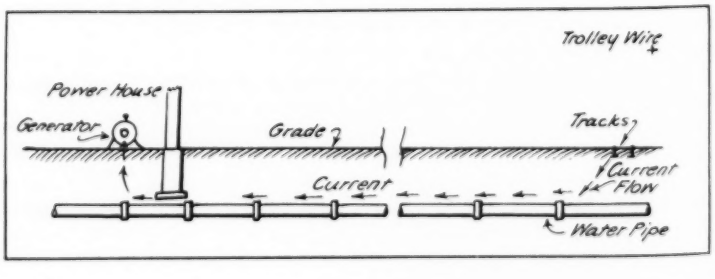


Fig. 5—Illustrating how electric current is likely to return to the generator

Management Article No. 8

Six Tested Rules to Follow for Salesman Control

1—Size of Sales Force. 2—Size of Territory. 3—Training the Men. 4—Efficiency. 5—Working Equipment. 6—Follow-up

THE first requisite to efficient supervision of salesmen is the managerial ability to control them. Our field work shows that if a plumbing and heating contractor is not a good sales manager, or has little time to follow the sales manager plan, being utilized successfully by dealers in all fields, including plumbing and heating, where outside selling is a requisite to maximum results, the usual procedure is to employ an experienced sales manager, hold him responsible for training and developing a sales force, paying him from 2 to 4 per cent over-writing commission on the sales of his men. Unless a sales manager can make at least $50 weekly on over-writings, he is not considered successful. An analysis of a territory will determine whether the sales manager plan may be profitable. If the territory offers possibilities, the investment is sound. There are capable sales managers in every territory who can make money selling plumbing and heating goods as well as automobiles and insurance if territorial analysis shows that the local field will support the promotion. Where the sales manager plan is utilized, the contractor keeps hands off sales promotional work, merely watching progress by means of a sales analysis chart as shown in the management article that appeared in the August issue of DOMESTIC ENGINEERING. Where the contractor supervises his own salesmen, he should see that the fundamentals found successful by retailers experienced with outside sales promotions are effected in his organization. He must also allot a certain amount of time each day to the supervision of his salesmen; otherwise he cannot expect maximum returns.

There are six basic sub-divisions to the third essential of sales control, otherwise, the supervision of salesmen. From extensive research among retailers using outside salesmen, including plumbing, heating and air conditioning contractors, we find that the best methods for handling these sub-divisions are described in the following:

1:—Size of sales force. Years ago the retailer or contractor employed as many men as he could induce to canvass, assuming that the more salesmen, the more sales. But it works out just the other way. Too many salesmen covering a territory are detrimental to sales and organization harmony. Our records show that from two to four salesmen yield the biggest profits in the field of plumbing, heating, air conditioning and home appliances. Dealers in all these lines are for a moderate sized sales force today. A large sales force usually means difficulties from many angles, say dealers experienced with outside salesmen, even where sales managers are employed, because the sales manager makes an additional man. He also sells or helps his men sell. Some contractors can cover a territory very nicely with one or two men, but one man or twenty-one men, sales control in all its essentials is needed.

SIZE OF TERRITORY

2:—Size of territory. Concentrate it as much as possible. Do not try to cover the whole state. Distant fields may look greenest, but there is often better sales vegetation right in your own front yard. Too big a sales area presents as many problems as too big a sales force. To get coverage of outlying sections, dealers often are obliged to pay car expenses for salesmen, averaging $10 weekly; otherwise, the men pass up distant calls, which may lose sales. Cost of sales is higher where territories are extended, because deliveries, service and installations take up considerable time en route. The size of the territory depends upon the section, but it can be determined while building the prospect list, a procedure which was detailed in previous articles. By segregating prospects according to sections and neighborhoods the dealer can determine the possibilities for selling different types of equipment,

the potential sales volume for each section and the number of salesmen needed to cover.

3:—Training the men. Salesmen need constant supervision, also incentives to beget enthusiasm to carry on. The sales meeting is the best training tool. At such gatherings, the modern way is not to try to tell the salesman how to sell. The procedure found most satisfactory today in training salesmen is the analytical training course, based upon the assumption that the sales the salesman loses are those that show up his weak points; hence, his lost sales are discussed and analyzed at meetings, thereby strengthening him where he needs strength. All salesmen have such weak spots. The old-fashioned type of pep talk given at sales meetings may have inflated many a salesman's ego, but they never cured him of the reasons for lost sales. Modern sales meetings are conducted with this end in view. Problems encountered in the field are talked over, demonstrations that failed to jell are pulled apart for defects, sales lost for all reasons are analyzed for cause and improved selling procedure and appeals are recommended by either the sales manager, dealer or other salesmen. Each salesman tells briefly what sales he lost and why he thinks he lost them. If he doesn't know why he lost a sale, he describes the conditions and others try to find the answer. Conversely, the salesmen discuss how they overcame objections that might have lost sales. Experience is the best teacher, provided it is competently analyzed and the knowledge resulting therefrom is used for betterment of selling technique. On the prospect card as shown in the August article on management there is a line reading "Excuse for not closing." Such queries are placed on prospect cards so that the individual in charge of the sales meeting may be guided in calling on the men for analytical discussions.

METHODS OF MANUFACTURE

Manufacturers' representatives often are asked to speak at sales meetings, but the modern tendency is to have the speakers discuss methods of manufacture instead of giving pep talks. The purpose of such talks is to fill an important gap which the sales manager, contractor or manufacturer's literature often does not supply. The more the salesman knows about the factory make-up of a product, the better he can sell it. This is an axiom long accepted as fact by manufacturers who make new salesmen spend a certain time in the factory studying production methods. It isn't usually feasible for the dealer to send a new salesman to a factory to watch an oil burner or gas water heater being produced, so he invites someone from the factory to tell his salesmen about it at a meeting. No sales force is small enough for the dealer to ignore the question of salesman training. Without experience or training no one is an efficient salesman, although some individuals are more adapted to selling than others.

4:—Training the men to be capable salesmen is one thing, but keeping them working at maximum efficiency is something else again. To this end, 60 per cent of dealers interviewed using outside salesmen give bonuses and 50 per cent give prizes periodically. Forty per cent run sales contests for their salesmen at least once yearly. Utilities have reported that sales contests run for plumbing and heating contractors have resulted in substantial sales increases. Obviously, contractors may make equal use of sales contests for their own salesmen. To get maximum efficiency from salesmen, quotas must be established; otherwise they have no goals to work to. The size of the quota is determined by territorial analysis and previous business done and should be established at the beginning of the year when making up the budget for sales and expenses, something that every contractor should do. Establish a fair quota. Do not make it too high; otherwise, the men, sensing their inability to make it, will give up trying. The total sales quota should be split up per salesman.

SALESMEN'S WORKING EQUIPMENT

5:—Working equipment. The salesman displaying a neat portfolio of facts and a good looking brief case has the edge on the salesman who carries a couple of circulars in his pocket. Contractors have found it profitable to invest as much as $20 in salesman's outfit, including in the leather portfolio testimonial letters from users, manufacturers' literature, newspaper clippings pertaining to the product or contractor, model plans and contracts. Some contractors spend $200 to $300 yearly for photographs of installations they have made. For new men a sales presentation guide should be given with the sales equipment. This guide contains selling appeals and facts about the products to help the new man get his bearings until he has assimilated sufficient information at sales meetings to make his own sales talk.

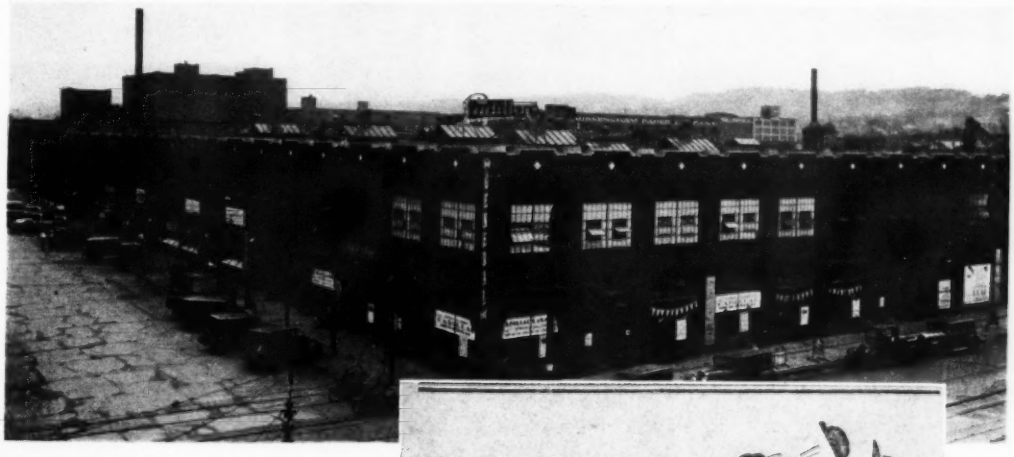
In a well regulated sales organization each salesman has a prospect file and often compartments for stocking literature. Prospect cards are in duplicate, the master file being kept up-to-date in the office. Salesmen misfile, lose or destroy cards. Two sets are thus necessary to adequate sales control. The duplicate file is also helpful when a salesman's prospect drops in at the showroom. By referring to the office card, the floor man can talk intelligently and does not cross wires. When "spotlight prospects" are to be kept in sharp focus for some reason, "spotlight cards" are used, either red cards or cards with red tabs to keep the signal bright.

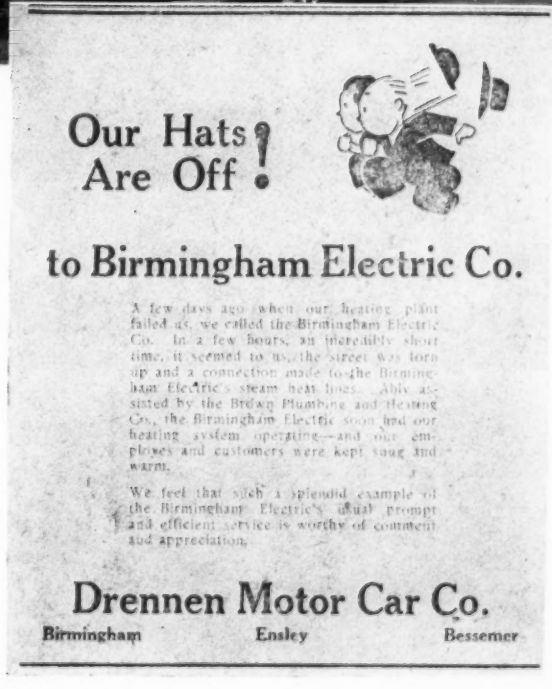
Automobiles are also working equipment for salesmen. The salesmen own their own cars. In 30 per cent of the cases the dealers pay car expenses, averaging $10 weekly.

THE FOLLOW-UP

6:—The follow-up. How faithfully the follow-ups are made has much to do with the success of a selling program. They must be made on the due date and an efficient sales control system will see that they are. Some dealers say that if a prospect isn't sold in 2 months of follow-up, it is useless to carry on, and they kill the card. Six follow-ups are the average per sale, about 1 week to 10 days apart. Follow-up calls should be made as soon as possible after the bite is written on the prospect register. Seventy per cent of outside sales are made at night. Salesmen should be checked to see that they make night calls regularly. If salesmen are inclined to shirk, the night calls are most likely to suffer. Showroom leads should be followed up. Many dealers report 75 per cent sales on showroom leads. This is one reason the plumbing and heating contractor should keep a prospect register (see the August issue for sample). The prospect register records the names of showroom prospects. The personalized follow-up is modern selling technique. Different prospects have different habits, as-

pirations, likes, dislikes, etc. If these are carded, often they will prove of sales value. For example, a prospect made a chance remark that his son continually flunked in manual training at school. The prospect seemed perturbed. A salesman interviewing him on oil burners suggested that he install power tools in the basement so that the lad could practice and an oil burner to make the basement habitable. He made the sale. The reference to his son's flunking in manual training was just a chance remark, but many such remarks are loaded with selling appeal if they are tied up cleverly with the product being offered.




Our Hats Are Off!
to Birmingham Electric Co.
A few days ago when our heating plant failed us, we called the Birmingham Electric Co. In a few hours, an incredibly short time, it seemed to us, the street was torn up and a connection made to the Birmingham Electric's steam heat lines. Ably assisted by the Brown Plumbing and Heating Co., the Birmingham Electric soon had our heating system operating—and our employees and customers were kept snug and warm.
We feel that such a splendid example of the Birmingham Electric's usual prompt and efficient service is worthy of comment and appreciation.
Drennen Motor Car Co.
Birmingham Ensley Bessemer

Quick Service Results in Satisfaction

Customer uses newspaper advertisement to show appreciation

THE slogan of J. M. Brown, of the Brown Plumbing & Heating Company, Birmingham, Ala., has for years been "Quick, the Plumber," but one customer of his apparently was not prepared for the quick service that he really gives.

The steam plant of the Drennen Motor Car Company in Birmingham gave away on one of the coldest days in the year. Officials of the company were seized with the fear they would practically have to suspend business for two or three days. They called in Mr. Brown and after some discussion it was decided to connect up with the city steam system.

The Birmingham Electric Company which operates the city steam system was thus brought into the picture. Neither Mr. Brown nor the utility made any promises but they went to work on the job. It was necessary for the utility to pipe the steam across a busy thoroughfare and tunnel under a double track trolley line before reaching the motor company's property line. From that point Mr. Brown went to work, laying 130 ft. of 4 in. pipe, several welding operations being necessary. The

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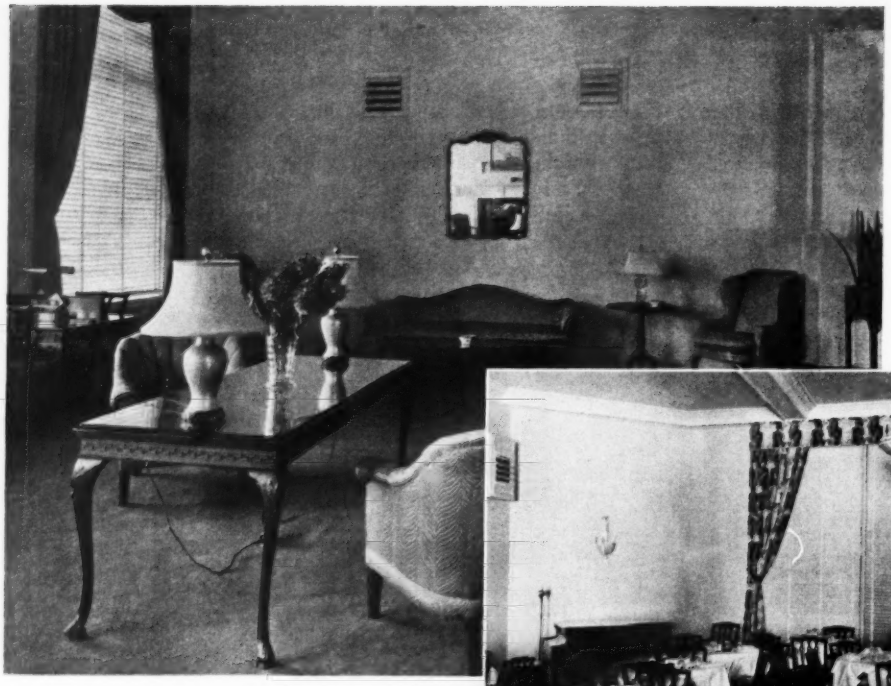
The photograph above illustrates the building of the Drennen Motor Car Co. Also shown is the advertisement of appreciation



The photograph at the left shows the lounge with the heater cabinet at the right housing a loud speaker. Below are two of the heaters in the dining room

The photograph at the bottom of the page shows one corner of the dining room. Note the grille at floor level

Remodel Hotel Heating with Unit Heaters

MODERNIZATION of heating for the Copley Square Hotel in Boston, Mass., was completed a short time ago through the installation of six unit heaters. The installation includes circulating ducts within the walls and return grilles located at floor levels. The heaters were equipped with three speed controls. Acme Heating & Ventilating Co. of Boston made the installation. The modernization and decorative plan was developed by Putnam and Cox, Boston architects, and Walter M. Ballard Co., New York interior decorators. The unit heaters were worked into the decorative scheme.

Of interest is the fact that a heating cabinet was used to house a radio loud speaker in the rooms served by the installation. The new unit heaters were connected to the existing steam heating installation. New air valves for the entire job were installed as an additional feature of the modernization of heating equipment. It should be pointed out that there is no connection between this installation and the problem described in the next article.

When the Wind Blows

and even when it doesn't, customers complain of drafts around the front door of this cafeteria. Earl Brown solves the trouble

FROM our files we have taken this correspondence concerning a drafty cafeteria.

Canton, Kansas.
March 16, 1936.

Dear Mr. Brown:

I have a heating problem on which I would like to have your advice. The Barnes Cafeteria is the largest eating place in town. Mr. Barnes called me just recently to see what I could do to heat the cold air which comes into the dining room whenever the entrance doors are opened. I am enclosing a rough sketch of the dining room which will probably tell you more than if I tried to explain the whole situation.

The two large radiators (150 sq. ft. each) which I installed on either side of the entrance doors do not seem to do the work, for the customers will not occupy the tables which are anywhere near the door and the cashier still complains of a draft along the floor.

Can you suggest anything that will solve this problem?

Yours truly,
Ralph O'Brien.

March 18, 1936.

Dear Mr. O'Brien:

Your letter of March 16 is very interesting. The trouble you are experiencing is very common in cafeterias and restaurants.

I wonder if there is not more to the story than you have written. I'll wager that your trouble starts in the kitchen exhaust fan. I distinctly recall the Barnes Cafeteria because you and I had lunch there the last time I was in Canton. I'd guess that they have a kitchen about 20 by 30 ft., with a ceiling height of about 12 ft. If this is correct, the kitchen volume is approximately 7,200 cu. ft. It is good practice to exhaust at least ten room volumes per hour, which in this case would be approximately 72,000 cu. ft. per hour or 1,200 cu. ft. per minute. Probably, then, they are exhausting from 1,000 to 1,200 cu. ft. of air per minute.

When you consider where this air comes from, you have the reason for the drafty condition described in your letter. When the doors are closed the air leaks in through every crack, and when they are open, the cold air rushes in through them, hence the draft.

The obvious remedy, of course, would be to stop the kitchen exhaust fan, but that would be impractical because it is needed to keep the kitchen odors out of the dining room.

Another solution that is sometimes tried is to run a duct to the outdoors with a radiator or heating system installed in it as shown in the attached sketch. (Fig. 3). With this arrangement the exhaust fan is expected to pull outdoor air into the room through the heating section, where it is heated. This arrangement is quite satisfactory if the doors are tight and as long as they are kept closed. However, as soon as they are opened, it is much easier for the cold air to rush in through the open doors than for it to come through the heating section and the louvre grille. The result is that whenever the doors are opened, drafts still occur, although they are not as bad as they are without the duct, but are nevertheless serious.

PLAN TO COUNTERACT EFFECT OF FAN

In my opinion, the best solution is to use a fan and heating section to introduce and heat just about the same amount of outdoor air as the kitchen fan pulls out. If this is done the full capacity of the kitchen exhaust fan is utilized because it will not have to pull its air in through small cracks when the doors are closed, and what is more important, the cold air will not rush in whenever the doors are opened.

If you use a unit heater for this, I suggest that you

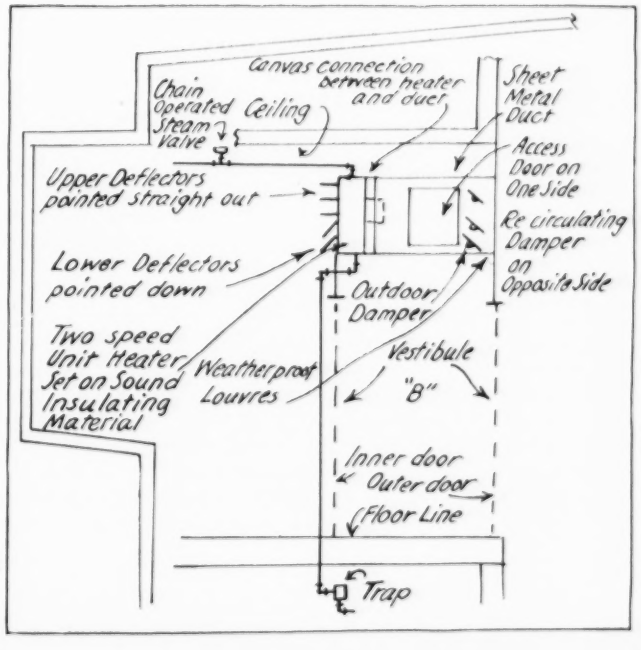


Fig. 1—Recirculation dampers installed on one side of the duct are connected to outdoor dampers so that when one set is open, the other set is closed permitting recirculation

select a two-speed heater which has a capacity of approximately 1,000 to 1,200 c.f.m. at slow speed. It should be selected on the slow speed rating because the heater will have to run on slow speed practically all of the time in this type of installation.

If you will install a set of dampers in the outdoor air connection, this opening can be closed conveniently overnight, also when the unit is recirculating. The recirculating dampers which can be installed very easily on one side of the duct (See Fig. 1) should be connected to the outdoor dampers so that when one set of dampers is open, the other set is closed. With this arrangement of dampers, room air can be recirculated whenever the kitchen fan is not running. The high speed setting of the heater will come in handy to heat the room quickly

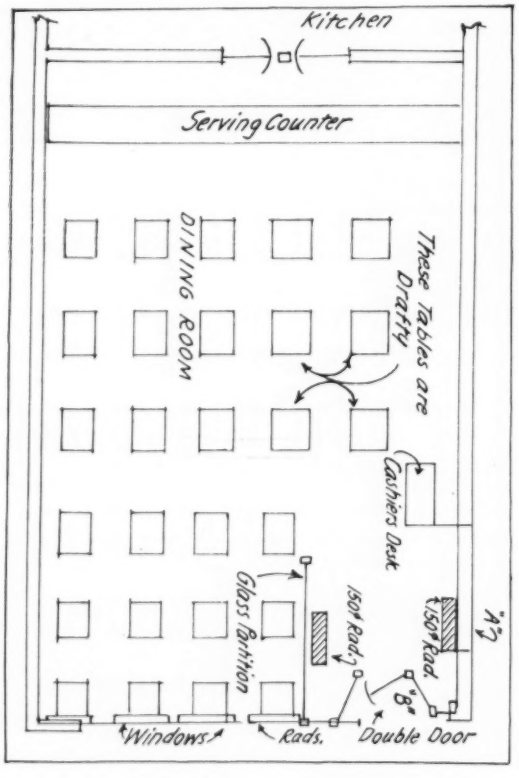


Fig. 2—A floor plan of the cafeteria showing the location of door and kitchen and the spots affected by drafts

by recirculation before the customers come in. Also any noise which may result from the high speed will not bother anyone at that time.

It is suggested that the heater should be set on 1-in. or 2-in. of vibration insulating material and the metal duct work should be connected to the heater by a canvas collar. If a metal duct is used, it should be insulated with at least ½-in. of insulating board to keep moisture from condensing on the outside of it.

The outdoor end of the duct should be provided with a set of weatherproof louvres and a screen to keep the birds out. This screen should be constructed of ½-in. mesh and should be installed on the inside of the louvres.

Such an installation could be hung from the ceiling of the dining room or it could be installed in an adjoining room. In the Barnes Cafeteria, I believe the best location would be over the vestibule, as shown in Fig. 1. This will give a high intake, insuring the cleanest air supply. It will also permit you to discharge some of the air directly down to the floor at a point just inside of the inner door where the stream of warm air will be very effective in breaking up any drafts caused by the opening of the door and by the wind. I would suggest pointing the two lower deflectors downward and the remaining ones straight out, as shown. With this arrangement, neither the tables nor the cashier's desk would be in the air stream.

The two-speed switch should be located at some convenient point, probably near the cashier's desk. The steam valve should be located where it can be operated easily, or, if it is located at a high point, it should be chain operated. The steam valve should be wide open and the heater should be supplied with steam at 2 to 5 lb. pressure whenever the outdoor temperature is below freezing. If the valve is throttled or the steam pressure is low when the temperature is below 32 deg. Fahr., the heater might freeze.

CONTROL OF ROOM TEMPERATURE

When the outdoor temperature is below freezing, the room temperature can be controlled by turning the direct radiators on and off. When the temperature is above freezing, the direct radiators can be kept turned off and the steam supply coming to the heater can be throttled down.

In selecting the heater, bear in mind that its maximum load will occur when it is operating at slow speed and heating air from a low temperature (perhaps as low as minus 10 deg. Fahr. in your town) to its maximum outlet temperature under these conditions (probably 130 deg. Fahr.). In such circumstances, the boiler load for a 1,000 c.f.m. heater will be approximately 630 sq. ft.

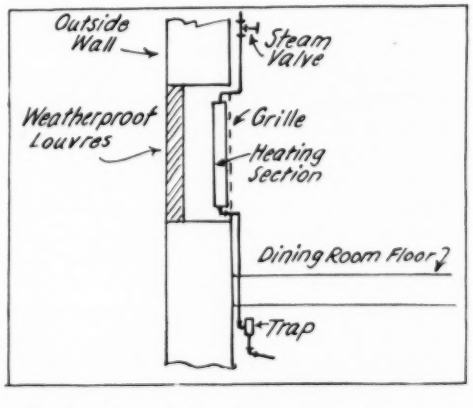


Fig. 3—One solution is to run a duct to the outdoors with a heating system installed in it

of radiation. The best location for the trap is on the basement ceiling.

I have used this heater arrangement a number of times

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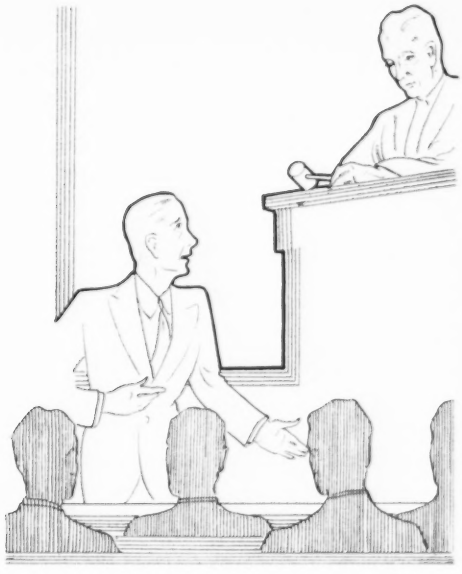
Legal Pointers

As They Apply to

Plumbing and Heating



By Leo T. Parker

FREQUENTLY, plumbing and heating contractors install plumbing or heating equipment in a leased building by order of a tenant, and subsequently have considerable difficulty in collecting the contract price from the owner.

Therefore, it is important plumbing and heating contractors know that the owner of a building is liable for the payment for work ordered by a tenant when (1) the owner is informed that the contractor is performing the work, and, also, knows that the contractor believes the owner intends to pay the bill; or (2) when the owner has either verbally or in writing authorized the tenant to act as his agent or representative when ordering or contracting with the contractor to perform the work; or (3) when the tenant contracts or orders the contractor to perform the work without knowledge or authority of the owner, and subsequently the owner ratifies or approves the contract; or (4) when the lease contract between the building owner and the tenant may be construed to obligate the owner to pay for work contracted for by the tenant. The reason for this latter new ruling of the law is that the courts invariably hold both parties obligated to fulfill the terms of a lease contract, particularly with respect to provisions which relate the necessary repairs of the building during the occupancy of the tenant.

For instance, in one specific case it was shown that the owner of a building leased it under a lease contract which contained a clause, as follows:

"Should replacement of the heating plant now located in said building become necessary through ordinary wear and tear, the lessor (owner) agrees to replace the same with another or others of at least equal efficiency and capacity to the present heating plant.... Should the lessor (owner) fail or neglect to make any repairs to the demised premises by it to be made under the provisions hereof, then the lessee (tenant) may at its option make such repairs, and the lessor shall reimburse it for all reasonable expenses thereby incurred."

The old heating plant was a hot air system, located in a brick room built adjacent to the building proper, and consisted of two units, of cast-iron furnaces. The building was 130 ft. long and 65 ft. wide. The plant was adequate for heating the premises at the time it was installed. Later the tenant began to complain to the owner that the heating plant had become inadequate and would have to be replaced. The owner failed to install a new heating system, and the tenant contracted with a heating company to install a modern steam heating plant at a cost of $4,020. The tenant demanded that the owner pay the amount due the heating company in accordance with the terms of the lease contract.

It is interesting to know that the lower court held the owner bound to pay the cost of installing the new plant and the higher court sustained this verdict, and said:

"The court finds from the evidence in this case that the heating plant which was in the premises at the time of the making of the lease thereafter became inadequate to heat the premises through ordinary wear and tear....Clearly the finding of the court had ample evidence to support it. Not only was there abundant testimony that cracks had developed in the fireboxes above the fuel level, which had the same effect as dampers, and materially interfered with the efficiency of the plant, and that the entire system had deteriorated to the point where it was more expensive to repair it than to install a new plant, but even from plaintiff's own side of the case there was positive testimony on the part of one

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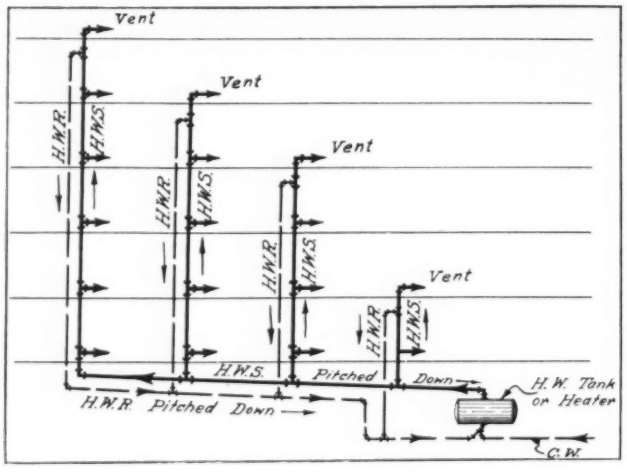


Fig. 1—This shows a typical example of an up-feed system

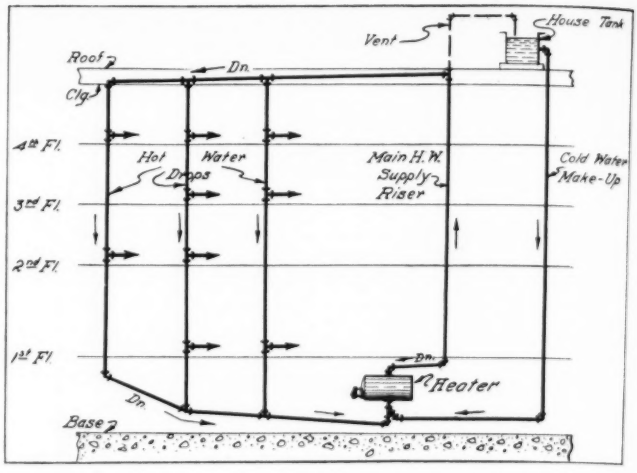


Fig. 2—The down-feed system of circulation is illustrated here

Practical Plumbing

This article, the sixth in a series, discusses the various types of domestic water heating systems and follows through several explanatory examples

By H. T. Hall

THE furnishing of a supply of properly heated water to a building and the ability to obtain this heated water almost immediately on the opening of any hot water faucet is a highly important item in plumbing work. In every building of any size or where the farthest fixture is over 50 ft. from the hot water heater or storage tank, it is almost imperative to use a circulating system.

Where the hot water is carried directly from the hot water heater or storage tank to the fixture faucet usually paralleling and in the same manner as the cold water lines, and without any return circulation, it is termed a dead-end hot water system. When the heated water lays in such a line for any length of time, it loses its heat by radiation and conduction so that it soon assumes the normal temperature prevailing in the building or very close to it.

In order to obtain hot water from any faucet on such a system after this cooling off has occurred, it is necessary to run off through the faucet all the cooled water in the line back to the heater or storage tank and until the hot water from the heater or tank has flowed up through the pipe to the open faucet. This results in a considerable waste of water and time.

This circulation may be simply a gravity circulation or it may be brought about by mechanical means with circulators, impellers, or pumps.

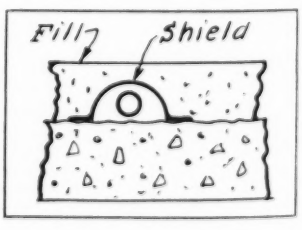
Probably the most common type of hot water circulation is that known as the up-feed system a typical example of which is illustrated in Fig. 1. Here the hot water proceeds from the tank, or heater, up the ordinary hot water riser and back down a return circulation riser ultimately arriving at the tank or heater to be reheated. It is important on this system that the recirculation should be taken off *below* the top fixture connection as shown so that the top connection will air vent the rise. When made as shown in Fig. 10, air collects in the high portion of the loop and stops the circulatory action.

Another system of circulation is that shown in Fig. 2 and is known as the down-feed hot water system. Here

Fig. 4—At the right, an uncovered pipe running through a floor fill

Fig. 5—On the opposite page, a covered pipe run through a floor fill

Fig. 6—Farthest to the right, method of installing check so that flapper will hang vertically



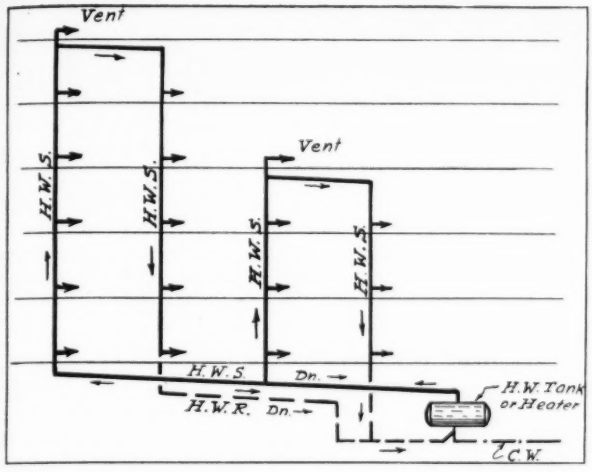


Fig. 3—Here is a combination of up-feed and down-feed systems

all of the hot water is carried to the top of the building where the line is air vented and then pitches down to the tops of the various down-feed hot water risers from which the fixture branches are taken. From the bottom of the down-feed risers return circulation lines are carried back to the heater or tank thus completing the circuit.

This system often is used in large buildings and is likely to require less piping and to have a smaller heat loss than an up-feed system for the same installation. This is due largely to the elimination of all the recirculation risers which must accompany the up-feed system.

The up-feed system in large installations and where fixtures, or fixture groups, are vertically located one over the other often is modified into an up-and-down-feed hot water system by connecting half of the up-feed risers at the top over to the other half of the risers and making the second half of the risers down-feed. This is illustrated in Fig. 3. The crossed connection should be made on the ceiling below the topmost fixtures so that the connections to the topmost fixtures will air vent the top of the loop at each riser.

Return circulation lines are then run back to the heater or tank from the bottom ends of the down-feed risers as indicated.

Difficulty is experienced with circulation systems occasionally through the tendency of the water to proceed from the tank or heater via the shortest route to the open outlet on the fixture. By the *shortest route* is meant the line or pipe which involves the least friction. If the circulation line is shorter (or involves less friction to the flow of water through it) than the supply line, the major portion of the water going to the fixture will flow through the circulation line and, if this flow continues for any length of time, it may result in cold water from the bottom of the tank coming out of the fixture faucet instead of hot water.

To overcome this check valves may be employed in the circulation system. These valves, in order to offer as little resistance to the normal circulation flow as possible, should have the flapper hung at a 60-degree angle instead of the usual 45-degree angle or should have a light weight flap in place of the usual flap. Where a standard check valve must be used, it may be placed on a 45-degree angle so the flap will hang vertically as shown in Fig. 6.

On an up-feed system check valves should be used on the bottom of each recirculation riser but not at the tank or heater. It is an axiom in hot water circulation work that the circulating water in making any complete circuit through any route in the system *should not pass through more than one check valve*. This must be kept in mind as a succession of check valves will build up sufficient resistance to the flow as to seriously interfere with—if not entirely stop—the circulation.

CHECKS FOR SYSTEMS

The up-feed system should be checked as shown on the typical riser detail in Fig. 7, where "SM" is the supply main, "RM" the return main, "CK" indicates the check, "G" a gate valve, "U" a union and "B" the various branches. The down-feed system should have checks as shown on the typical riser illustrated for this type of system in Fig. 8, in which "CK" is the check valve, "SM" the supply main, "RM" the return main, "D" the down-feed riser, "B" the branches, "U" a union and "G" a gate valve. The up-and-down-feed system would be checked the same as the up-feed system the only difference being that branches also are taken off of the return riser which would not change the checking arrangement. When only a single riser, or loop, is used in any of these systems a single check may be located at the heater or tank as shown in Fig. 12.

A circulating system may have the cold water make-up enter at any one of several points but the best place usually is in the recirculation line just before it connects to the tank or heater. There are two reasons for doing

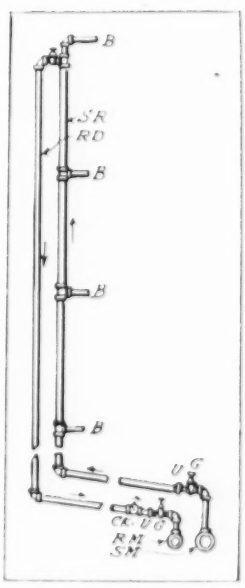


Fig. 7 — A typical riser detail for an up-feed system

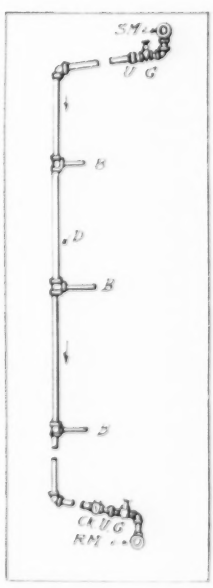
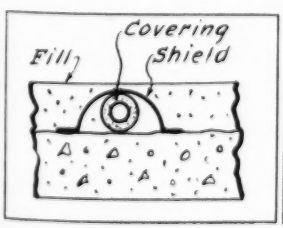
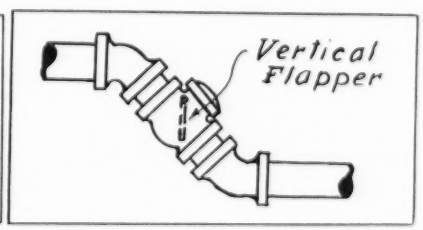


Fig. 8 — Down-feed system is shown at right





this. First, by properly arranging such a connection an injector action can be secured which accelerates the circulation, and, second, the cold water make-up is tempered by mixing with the recirculation water and thus produces less temperature stress on the heating equipment than when it is injected separately.

When the make-up enters the circulation line, the return enters the branch of a Y fitting and the make-up enters the end of the fitting as illustrated in Fig. 11. The Y is made two pipe sizes larger than the largest pipe entering and the make-up connection is provided with a long thread so that it may be screwed into the fitting until the end of the pipe is about on a line with the intersection of the branch. The combined line between the Y fitting and the heater or tank should be of the same size as the hot water supply pipe to the building. This is illustrated in Fig. 13.

Another method of introducing the cold water make-up in small systems is by means of a straight cold water tube as used for range boilers and for horizontal tanks a bent tube often is used as shown in Fig. 9.

Piping buried in concrete always should be kept free of the concrete so as to provide for a slight movement in the pipe; this is particularly true in the case of hot water piping and circulating water piping. In passing through concrete floors this is accomplished by using a pipe sleeve two pipe sizes larger than the pipe or providing at least ¼ in. clear space all around the pipe.

PIPE SHIELDS

Where lines are run in the floor fill a semi-circular sheet metal cover should be used to keep the concrete floor fill from attaching to the pipe. If the lines are not covered at least ¼ in. space should be maintained between the pipe and the cover, but where the lines are covered this is not as important as the covering itself will give to some extent. Typical cases are shown in Fig. 4 and Fig. 5.

Even where hot water lines are run exposed, provisions should be made for expansion by using breaks, offsets or suitable expansion loops. The expansion on steel and iron hot water lines usually approximates ½ in. to ¾ in. per 100 ft., while in brass or copper pipe it will increase to ¾ in. to 1 in. The exact amount of expansion is determined by the metal in the pipe and the highest and lowest temperature to which the pipe may be subjected. See curves shown in Fig. 14.

PIPE REQUIRED FOR EXPANSION

In expansion bends it makes little difference how the bend is made as long as the amount of pipe in the bend remains the same. Fig. 15 shows the approximate amount of pipe required to absorb different amounts of expansion in steel and wrought iron lines of different sizes, and about 60 per cent more should be used when the lines are of brass or copper.

There are three common methods of heating water:

(a) By direct heaters fired with coal, oil or gas
(b) By indirect heaters
(c) By steam coils

Also, water is heated by several other methods such as by electricity, or by means of solar heaters utilizing the heat from the sun; the solar heater is in quite customary use in the southern part of California, in Florida and in parts of Texas.

The *coal-burning* type of hot water heater usually is a water-jacketed stove in which a fire is carried on a grate with a considerable fuel space so that the heater will require comparatively infrequent firing. Most of these heaters are rated in the number of gallons which they will heat or the Btu. which they will deliver under

(Continued on Page 185)

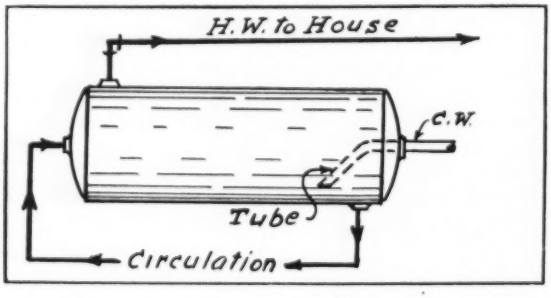


Fig. 9—The drawing at the left shows a bent tube which is used for introducing cold water

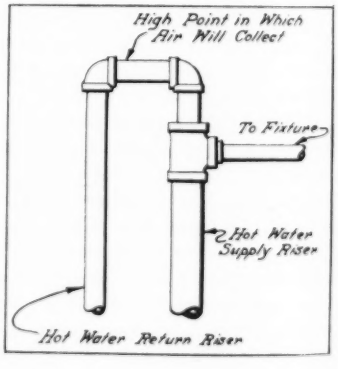


Fig. 10—In the assembly at the right air collects in the high portion of the loop and stops circulation

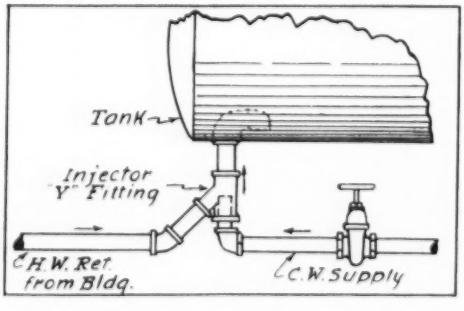


Fig. 11—Showing entrance of both return and make-up into the circulation line

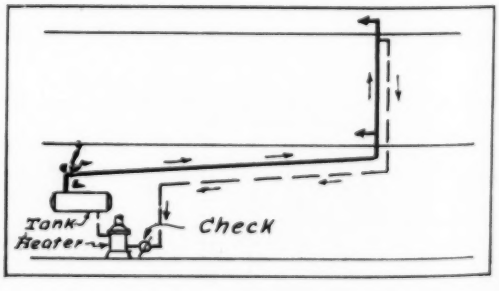
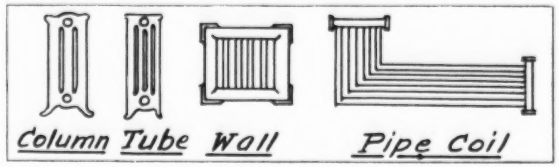


Fig. 12—A single check is provided when a single loop is used

6—
Radiators

Ordinary radiators usually are of column type (now discontinued), tube type (which has replaced the column design), wall type, or pipe coils.



All tubular radiators today are rated at 240 Btu. per sq. ft. of nominal surface; the wall radiators and pipe coils are taken at 300 Btu. per sq. ft. of actual surface except when placed on ceiling when they usually are taken at 250 Btu. The old column radiators have variable heat emissions; the Btu. per actual sq. ft. with 1 lb. steam and 70 deg. Fahr. in the room approximate the following:

Cols.	20-22 in.	26 in.	32 in.	38 in.
1	280	278	270	263
2	262	255	248	240
3	247	240	234	227
4	234	227	219	212
6 (Window)	272	...	...	...

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7—
Radiator Ratings

The tubular radiator contains the following sq. ft. of nominal surface per section.

Height	3 Tube	4 Tube	5 Tube	6 Tube	7 Tube
38 in.	3½	4¼	5	6	...
32 in.	3	3½	4½	5	...
26 in.	2⅓	2¾	3½	4	...
23 in.	2	2½	3	3½	...
20 in.	1¾	2¼	2⅔	3	3⅓
17 in. (Window)	...	...	...	...	3
14 in. (Window)	...	...	...	...	2½
38 in. (Hosp.)	3½	...	5	...	...
32 in. (Hosp.)	3	...	4⅓	...	...
26 in. (Hosp.)	2⅓	...	3½	...	...

The old column type runs as follows:

Ordinary

	Columns				
Height	1	2	3	4	Wind.
45 in.	...	5	6	10	...
38 in.	3	4	5	8	...
32 in.	2½	3⅓	4½	6½	...
26 in.	2	2⅔	3¾	5	...
23 in.	1⅔	2⅓	3	4	...
20 in.	1½	2	2¼	3	5
18 in.	...	...	...	...	4½
16 in.	...	...	...	...	3¾
13 in.	...	...	...	...	3

Hospital

	Columns			
Height	1	2	3	4
45 in.	...	5	6	10
38 in.	3	4	5	8
32 in.	2½	3⅓	4½	6½
26 in.	2	2⅔	3¾	5
23 in.	1⅔	2⅓	...	...
22 in.	...	...	3	4
20 in.	1½	2	...	...
18 in.	...	...	2¼	3

Published by Domestic Engineering

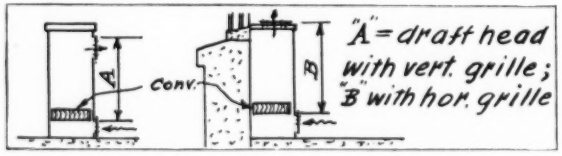
During the publication of the automatic heat and air conditioning reference tables, just recently completed, we received numerous requests from readers for back copies of sheets they had missed. These continue a new series and this time it is on heating subjects

8—

Convectors

A heating surface which heats by means of a circulation of a gas, (air) or a liquid, (water) and which delivers the heat at some other location without the use of any *direct* heat rays, is a convector. From the above it will be seen that all concealed, all indirect, and all cabinet radiators are convectors. The amount of heat received from a convector is governed by the design and size of convector, the relative temperatures of the air and heating medium, and the stack height or draft head.

The draft head is the distance from the bottom of the convector to top of the supply grille.



The number of Btu. delivered by convectors must be obtained from the manufacturer's catalog.

Published by DOMESTIC ENGINEERING

5—

Calculating Coefficients

Example—

What is the coefficient of heat transmission for the ordinary frame house wall made up with 2 in. × 4 in. studs, 7/8-in. sheathing (25/32-in. thick), clap boards (average thickness 5/8-in.), building paper and with ordinary wood lath and plaster inside?

Solution—

Substituting in formula on page 3 gives:

$$\frac{1}{\frac{1}{4.02\ \text{o. s.}} + \frac{(25/32 + 5/8)}{1.00\ \text{wood}} + \frac{1}{1.10\ \text{air sp.}} + \frac{1}{2\ \text{L. \& P.}} + \frac{1}{1.34\ \text{I.S.}}} = \text{coefficient}$$

—or—

$$\frac{1}{0.249 + 1.406 + 0.91 + 0.50 + 0.746} = \text{Coefficient}$$

—which is—

$$\frac{1}{3.813} = \text{Coefficient}$$

—or—

$$0.261 = \text{Coefficient}$$

Note: The A.S.H.V.E. Guide gives a coefficient of 0.262 for same wall.

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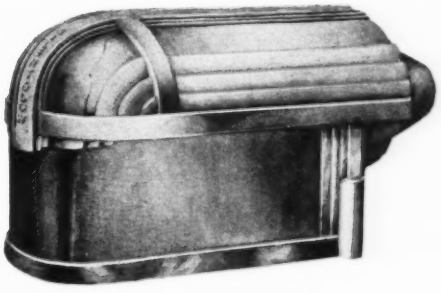
Show 'em how the Silent Glow Sealdheet

ENDS FIRE BOX CHILLS

and watch your Sales shoot up



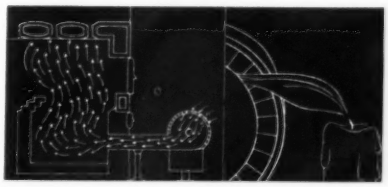
THERE'S an amazingly simple formula for landing contracts when you sell the Silent Glow Sealdheet. First, you show prospects how—with ordinary oil burners—"fire box chills" waste 25% of the heat. Because every time the burner shuts off, cold air rushes into the fire box and robs the boiler of its stored-up heat. It's just like a man leaving the front door open every time he leaves the house.

Next, you explain why the Silent Glow Sealdheet is the first burner that ends this waste. You demonstrate the patented Progrotor, showing how its blades automatically form a closed door the instant the burner shuts off. No danger of "fire box chills" with a Sealdheet. Cold air is locked out—the boiler's stored-up heat is locked in. Actual tests prove this reduces fuel costs from 20% to 30%.

Silent Glow dealers find this one point closes a large proportion of sales. But other Sealdheet features are equally advanced.

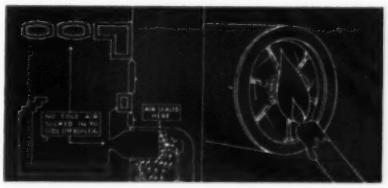
Sealdheet's flame travel is 108% greater than with conventional burners. Its motor is half the usual size. It is completely accessible by removing only three screws.

To dealers who want to get out of the rut of selling the same kind of burner everybody is selling—who are looking for a burner they can sell without giving away their profits—the Sealdheet story is bound to be interesting. Clip the coupon for it today.



THE OLD WAY—FIRE BOX CHILLS

Hold a candle beside the fan housing of a conventional burner when it shuts off. The flame is sucked into the burner, showing how cold air rushes in and causes "fire box chills."



THE SEALDHEET WAY—HEAT SEALED IN

Repeat the candle experiment with a Sealdheet burner. The flame is not disturbed because the Progrotor forms a door that stops cold air at its source. The boiler's stored-up heat is sealed in.

Silent Glow Oil Burner Corp., DE9.
Hartford, Conn.

Please send—free—your booklet "Experience" describing your new Sealdheet burner.

Firm name .....

Street .....

City ..... State .....

By .....

SILENT GLOW OIL BURNER CORPORATION

Factory: HARTFORD, CONN. *Branches:* BOSTON, CHICAGO IN CANADA, WATERLOO, P. Q

My Customers Moved!

Contractor-dealer Tells Basis of Sound Business

The neighborhood has changed, people have moved, but new business comes from old contacts established years ago

By Paul Watson

TO many people the year 1895 is just a date, but to John J. Delehant it is the year in which he started in the plumbing business at 733 W. 47th St., Chicago. It happens also to be the year in which the traction interests began to replace horse-cars with trolley systems. In other words, it was quite a while ago.

From 1895 and up until 1910, John J. Delehant was busy establishing himself in that district south and east of the Chicago stock yards. The neighborhood then, was young, and the streets were lined with growing trees and good homes. Such personages as the packer, Edward Tilden, D. E. Hartwell and Mr. Copley of Swift and Company, Jim Fitzmaurice of the Chicago Junction Railroad, father of Charley Fitzmaurice, later Chief of Police, and many others, lived in that district and were numbered among Mr. Delehant's customers.

Today, they and their families are widely scattered, but John Delehant did such a good job of establishing himself in those years prior to 1910, that many of those who remained in Chicago still call on him for their plumbing.

Those early years were marked by a rapid growth in population, and the chaotic conditions presented to those in the plumbing industry a great future opportunity to serve the populace. For example, Mr. Delehant points out that in 1895 a community was found in Chicago where 19,000 people were without any bathing facilities whatever, except the river. And in 1900 the opening of the Sanitary Canal permitted the construction of additional sewers, and so increased the use of plumbing, and therefore the health of the city, that the typhoid death rate fell from 1,489 deaths in 1892, to 370 in 1905. Good plumbing accomplished this, notwithstanding the fact that the years 1900 to 1910 saw Chicago's population increase by nearly 500,000, and of this number, about 400,000 were either immigrants or children born to foreign parents. In this struggle to improve the health of a city, John Delehant, the plumber, took his place and played a part.

There was, however, another struggle going on that in time began to affect John Delehant. The immigrants flooding the city at a rate of 50,000 a year were pressing against and overflowing into the better communities, bringing with them lower standards of living, and as a result neighborhoods decayed.

Chicago, therefore, was not all opportunity in those days. It takes money to pay the plumber as well as the piper, and it takes time for immigrants to acquire money. Also, it was a time of strikes and agitation. Mr. Delehant recalls that in 1895, Chicago was emerging from the panic of 1893 and recovering from the Pullman strike of 1894. In 1900, progress of any kind was threatened when 7,000 men of the building trades walked out, creating a bitter war that lasted several months.

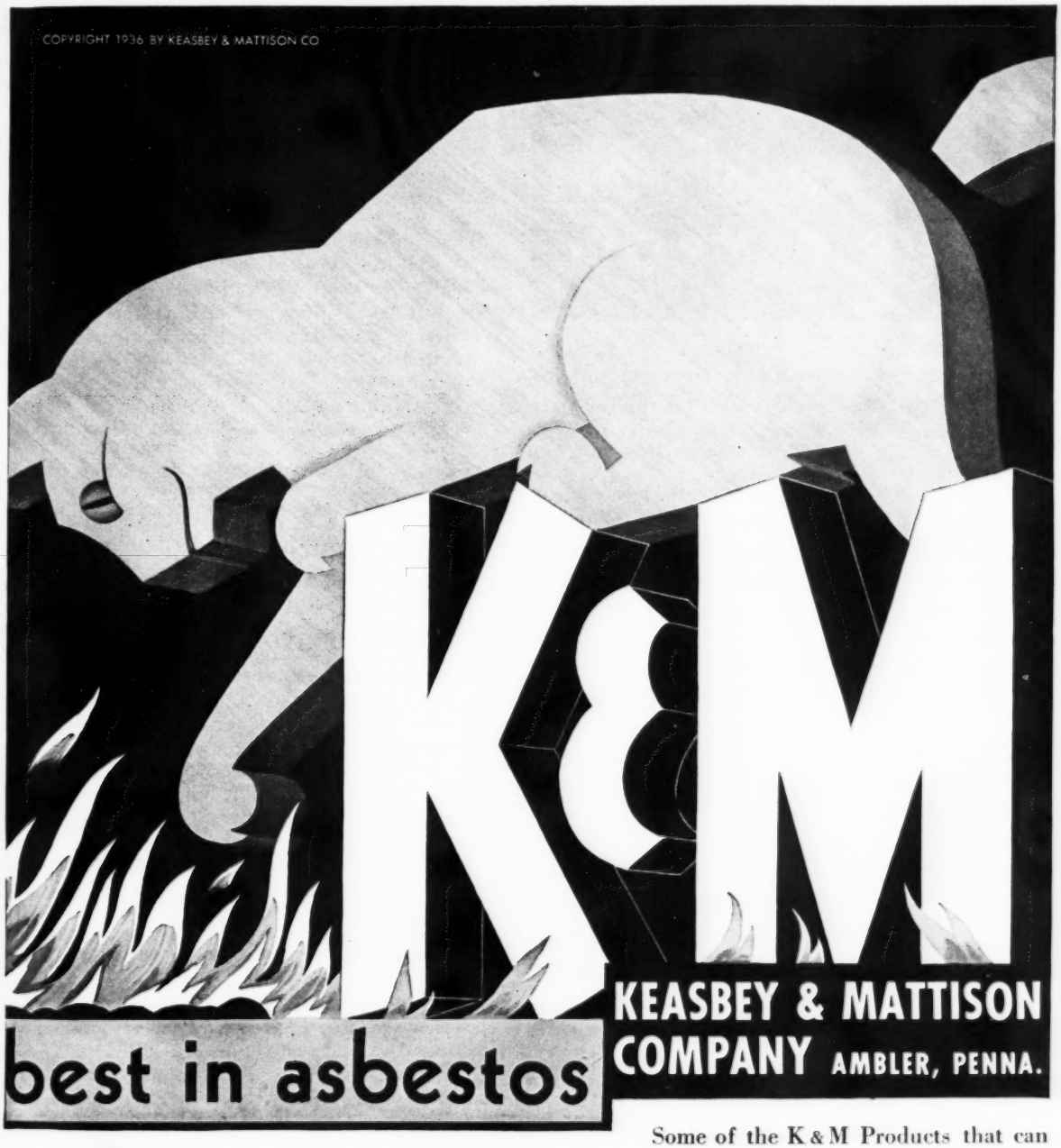
With this fusion and flux of mankind it was not surprising that a district as close to an industrial center as the one in which Mr. Delehant had located would change, both in appearance and personnel. And the effect upon the neighborhood's character produced by the importation from the South of 65,000 negroes to work in the packing houses during the World War, 1917-19, merely hastened the ultimate result. Yet, John Delehant continued to do a thriving business, but he began to contact that business more and more through the extended use of the telephone.

NINETY PER CENT DONE OVER 'PHONE

Today, not ten per cent of his business is done in the district in which he is established. Ninety per cent is done over the 'phone.

The change of course was gradual, and many a man would have awakened one day to find himself either out of business, or compelled to serve a class of people who could afford few repairs. But John Delehant kept in touch with his old customers, and where they moved he created new contacts. In 1924, for instance, he secured the new Capitol Theater job and the Stratford remodeling job through contacts that had been established back in the old district.

From the beginning, John J. Delehant had ideals to which he adhered. So well did he impress his customers with these ideals, and with his sincerity and fairness; so well did his plumbing stand the test of use and time, and so well did his clients like John Delehant, that as they moved, one by one, out of the old neighborhood into the new, they didn't think of looking up the neighborhood plumber, and they weren't buying trade



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Some of the K & M Products that can make your place of business the Insulation Headquarters of your community:

Asbestos Aircell Insulations in sections and blocks

Woolfelt Pipe Insulations

"Featherweight" 85% Magnesia Pipe Insulation and Blocks

Asbestos Insulating Cements

Asbestos Paper and Mill Board

Asbestos Packings and Gaskets

Range Boiler Jackets

Asbestos Lead Joint Runners

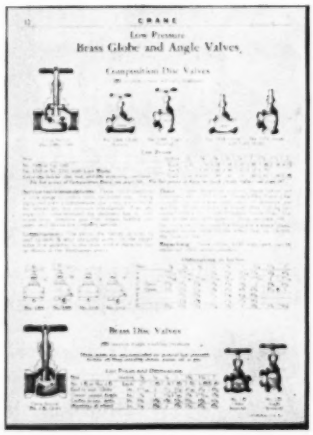
Salesmen WHO AREN'T ON YOUR PAYROLL

A CERTAIN volume of work comes to you unsolicited. Satisfied customers talk about their jobs to men who are prospects. The prospects come to you.

Materials, as well as craftsmanship, make satisfied customers—salesmen who work for nothing. Keeping a stock of Crane valves and fittings on hand eliminates the necessity of using a valve or fitting of unknown quality just because it happens to be on hand. Standardizing on Crane valves and fittings guards your profits and reputation, helps to hold down costs and makes selling easier because the name CRANE is one that your customers know, respect and accept.

The Crane line is complete. It supplies your valve and fitting needs at modest cost with goods of highest quality and with many advanced features. Maintain a well-balanced inventory. Make it a practice to order all necessary valves and fittings when you order Crane plumbing fixtures, boilers, or pumps. The Crane branch or distributor near you can fill your needs promptly from stock.

★



Crane No. 1B Brass Globe Valve for general low-pressure service on lines carrying steam, water, oil, or gas

CRANE

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO, ILLINOIS
NEW YORK: 23 W. 44TH STREET
Branches and Sales Offices in One Hundred and Sixty Cities
VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

names, they bought John J. Delehant's plumbing. Two rather "long-distance" cases occurred in 1932, when two of his old customers, who had been living out of the district for years, decided to build fine homes in Beverly Hills, and he got the jobs.

John Delehant believes there is a reason for this, the same reason an old neighbor gave, a couple a months ago, when he called him out to Chatham Fields to install a water heater in his home, "I know I'll get the best," he said.

"Never," says John Delehant, "charge a price that will not allow you to do good work. Charge a fair price, but a price for which you can afford to give the best service. It has been my practice to charge the prevailing rates or somewhat above, but I give service in accordance."

This carries with it the implication that one should try to deal with those who are well able to pay for their

(Continued on Page 180)

Business Overhead

"Business Overhead" is the title of an article which was published in the August issue of DOMESTIC ENGINEERING beginning on page 94 under the signature of Walter Raid.

Mr. Raid is an active member of the Master Plumbers Assn. of Philadelphia. He has shown commendable and outstanding initiative in educational work among his fellow plumbing and heating contractors.

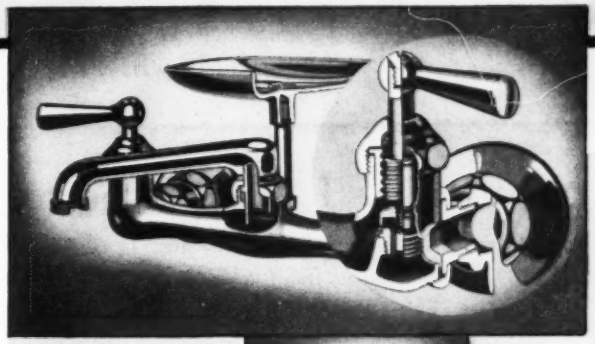
The article entitled "Business Overhead" is a reprint of an address delivered by Mr. Raid at the forty-second annual convention of the Pennsylvania State Assn. of Master Plumbers at Allentown, Pa., May 18-20, as one of the regular papers on the program. In line with DOMESTIC ENGINEERING'S customary service of reporting completely for its readers the different happenings in our industry, our representative at the Pennsylvania convention obtained a complete copy of Mr. Raid's talk along with copies of the other talks delivered. The report of this convention was published in the June issue. The volume of material on hand made it impossible to reproduce Mr. Raid's talk in full at that time. We took this as an opportunity to obtain for our readers additional information on the very important subject of overhead and, accordingly, wrote Mr. Raid for any further comments he might have. As already pointed out, Mr. Raid's material later was published in the August issue.

The reason for this detailed explanation is that since publishing this material we have been informed by the publishers of Plumbing and Heating Trade Journal that substantial portions of Mr. Raid's talk consisted of excerpts from an article which appeared in the January issue of that publication which, of course, we did not know at that time.

Those who are acquainted with DOMESTIC ENGINEERING, its policies and practices, will recognize that in carrying on a continuously expanding program of service to our readers and our industry our constant effort is one of developing sources of information and ideas which are original with DOMESTIC ENGINEERING, or with our contributors.

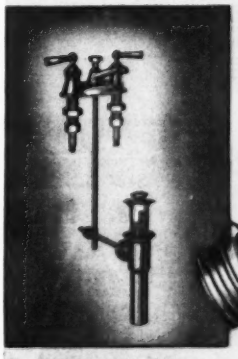
SELL CRANE BRASS FOR CUSTOMER

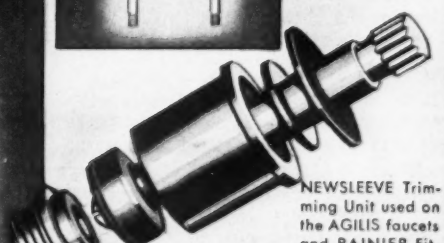
Satisfaction and Profit



C 32740-SN IMPROVED AGILIS double sink faucet with NEWSLEEVE trimming units, renewable seats, and soap dish of generous size.

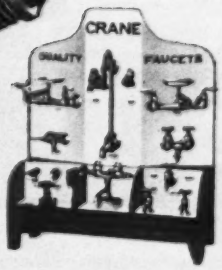
C 31906-N IMPROVED AGILIS double faucet with NEWSLEEVE trimming units, renewable seats, indexed metal lever handles.





NEWSLEEVE Trimming Unit used on the AGILIS faucets and RAINIER Fitting shown. Makes replacement of disc and operating parts easy. Slips in like a cartridge. Remove bonnet and lift out.

C 32282 RAINIER Supply and Pop-Up Waste. A single compact unit, moderately priced. Leaves plenty of space. Embodies latest construction features such as NEWSLEEVE trimming units with swivel discs and renewable seats.



FREE—
Brass Display Stand
And $8.00 "to boot"
Send Coupon For Details

● Your customers naturally want Crane Plumbing Brass because of its attractive appearance and dependable performance in new installations—when replacements are necessary—or for rejuvenating middle-aged plumbing fixtures.

Of highest quality brass, heavily plated in durable chromium, the high finish and smart appearance of Crane Plumbing Brass create a decided preference for them on sight. The name CRANE, modern efficient design, convenient operation, dependability and long life make selling easier for you.

Fall is "fix-up time"—the time to call on your customers. With Crane Brass you have the goods they want. Use the Crane Brass Display Stand in your window or store to catch the passer-by and the visitor. It means an extra profit for you.

Your customers' improvements can pay for themselves on the Crane Finance Plan.

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CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVENUE, CHICAGO, ILL.
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Branches and Sales Offices in One Hundred and Sixty Cities
VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

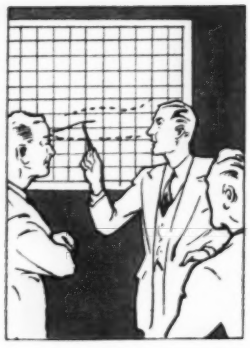
D. E. 9-36

Crane Co., 836 S. Michigan Ave., Chicago
Gentlemen: Please send complete details on how I can obtain—absolutely free—a modern, new brass fixture display stand and an $8 saving in my purchase price on the fixtures displayed.

Name

Address

City *State*



Business

Increases Shown. . . . **Heating Items Outstanding. . .**

Unusually Large Increase

• *Curve now stands at 96.9, 16.2 higher than last month—Outstanding gains made in boiler and radiator shipments—Plumbing equipment also showed a substantial gain*

The unusually large increase reported by plumbing and heating wholesalers in June is reflected in the marked advance shown by the DOMESTIC ENGINEERING Composite Curve. The curve now stands at 96.9 as compared with 80.7 in May and 83.99 in June of last year. The outstanding gains made in boiler and radiator shipments were the principal factors in this increase, although plumbing equipment also showed a substantial gain.

Key Wholesalers

One hundred and eighteen wholesalers reported an average gain of 41.88 per cent in July over the same month of last year and a gain of 6.69 per cent over June of this year. Fifty-seven of these wholesalers expect August to show a continued gain over the previous years, thirty-three expect it to be about the same, while two expect a decline and twenty-six did not comment.

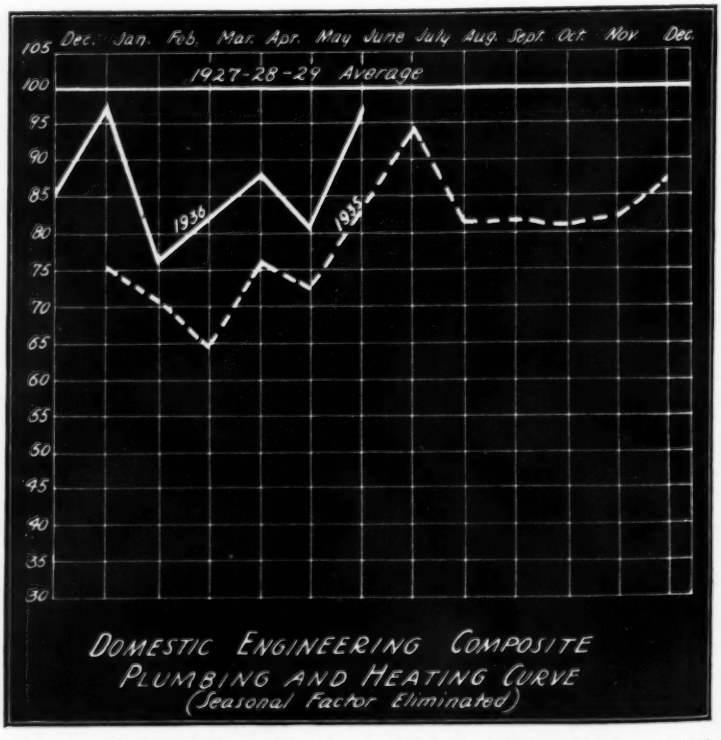
New England States:—Eight wholesalers in this section reported an average gain of 30.5 per cent over the same month of last year and a gain of 10.37 per cent over the previous month of this year. Two of these firms expect August to show continued improvement, while five expect it to be about the same as last year.

Middle Atlantic States:—Fifty wholesalers in this section reported an average gain of 37.1 per cent in July over the same month of last year and an increase of 1.02 per cent from June of this year. Twenty-four of these firms expect August to show continued improvement over last year, fourteen expect it to continue about the same and twelve did not comment. A New York City wholesaler reports that the Robinson-Patman bill has created a lot of discussion and that they feel that a decided attempt by manufacturers to stabilize the price market will result.

An eastern Pennsylvania wholesaler reports that business continues to increase despite a lack of residential construction. A northern New Jersey wholesaler reports that their July business was the best in three years. Another northern New Jersey wholesaler reports that the decline from June for their firm was much less than was anticipated due to the large volume of boiler and radiator shipments made by their firm in June. This same wholesaler feels that the efforts to strengthen the price structure will aid in strengthening the jobbers' resale prices.

Another northern New Jersey wholesaler reports that their heating business is showing a temporary decline due to the price increase.

A New York City wholesaler reports that price competition in that section is ruinous, and that many wholesalers are quoting prices that represent merely cost plus the brokerage commission rather than a profit. A Pennsyl-



The curve stands at 96.9 as compared with 80.7 in May and 83.99 in June of 1935

*This index and analysis of business conditions in the plumbing and heating industry has been developed by the Marketing & Research Bureau.

SHIPMENTS OF PLUMBING AND HEATING ITEMS

	June 1936	June 1935	Total 6 Months 1936	Percent of Increase 6 Mos. '36 over 6 Mos. '35
Porcelain Plumbing Fixtures				
Number of Pieces	3,034	2,417	12,520	13.99
Cast Iron Boilers				
Thousands of Pounds	22,718	13,410	93,272	34.99
Cast Iron Radiation				
Thousands of ft. of Htg. Surface	5,590	3,462	23,302	44.57
Steel Boilers				
Number of Units	1,049	524	4,390	47.66
Domestic Water Systems				
Number of Units	16,714	10,989	67,907	25.65
Range Boilers				
Number of Units	72,921	85,413	399,250	6.94
Oil Burners				
Number of Units	14,449	10,044	59,958	39.11
Mechanical Stokers (for residential apartments and commercial use)				
Number of Units	4,656	2,645	18,767	98.49

JUNE BUILDING PERMITS—25 Most Active Cities

State and City	New Residential Buildings	Families Provided For	New Non-residential Buildings	Total (Including Repairs)
NEW ENGLAND STATES				
Massachusetts				
Boston	119,600	30	129,911	792,826
MIDDLE ATLANTIC STATES				
New Jersey				
Jersey City	0	0	8,300	657,737
New York				
Buffalo	94,100	24	561,620	753,849
Mount Vernon	485,300	156	14,625	509,915
New York City:				
The Bronx	19,009,000	5,297	1,099,600	20,532,214
Brooklyn	997,900	280	446,425	2,668,847
Manhattan	3,727,000	895	6,905,850	12,950,059
Queens	2,441,350	760	248,420	3,202,416
Richmond	108,050	2[illegible]	135,790	316,114
Rochester	65,900	10	803,868	1,092,795
Syracuse	17,500	3	738,125	781,505
Pennsylvania				
Philadelphia	442,500	90	294,330	1,224,778
Pittsburgh	75,900	27	160,135	953,112
EAST NORTH CENTRAL STATES				
Illinois				
Chicago	595,450	96	1,353,132	2,993,794
Indiana				
Indianapolis	207,000	44	1,582,833	1,840,443
Michigan				
Detroit	2,951,150	514	1,425,752	5,265,952
Ohio				
Cincinnati	1,146,200	239	2,000,885	3,416,531
Wisconsin				
Milwaukee	466,570	95	95,263	875,240
WEST NORTH CENTRAL STATES				
Minnesota				
St. Paul	398,216	65	426,000	973,996
Missouri				
St. Louis	522,100	83	147,121	910,611
SOUTH ATLANTIC STATES				
District of Columbia				
Washington	2,999,041	725	5,255,093	9,015,174
Florida				
Miami	682,863	175	255,781	1,080,577
Miami Beach	1,012,600	131	179,100	1,317,537
Maryland				
Baltimore	485,000	120	547,400	1,584,500
WEST SOUTH CENTRAL STATES				
Texas				
Fort Worth	133,509	48	1,284,873	1,455,152
Houston	779,050	223	304,200	1,176,322
PACIFIC STATES				
California				
Los Angeles	3,024,364	812	2,120,193	5,884,940
Oakland	287,966	68	1,213,371	1,900,056
San Francisco	775,111	206	192,356	1,278,184

vania wholesaler reports that competition in their territory is very keen and that they feel that wholesalers should take advantage of the situation and try to replace some of the money which was expended during the lean years.

South Atlantic States:—Seven wholesalers in this section report an average increase of 66.28 per cent in July over the same month of last year and an increase of 5.86 per cent over the previous month of this year. Three expect August to show continued improvement over last year, one expects it to be about the same and three did not comment.

East North Central States:—Twenty-six wholesalers in this section reported an average increase of 47.92 per cent in July over the same month of last year and an increase of 13.38 per cent over the previous month of this year. Seventeen expect August to show continued improvement, four expect it to continue about the same and five did not comment.

A central Michigan wholesaler reports that wholesalers in Michigan are busier than at any time since 1929 and that if the next five months keep up with the past seven months they should equal '29 sales with profits much better.

East South Central States:—One wholesaler in this section reports an increase of 73 per cent in July over the same month of last year and an increase of 42 per cent over the previous month of this year. August is expected to show a slight decline from last year. This firm reports that their large increase is due to several projects financed by government money and since no similar business is in prospect for August, they will be satisfied with a 50 per cent decline.

West North Central States:—Fifteen wholesalers in this section report an average increase of 48.33 per cent in July over the same month of last year and an increase of 15.67 per cent over June of this year. Four of these firms expect August to show continued improvement over last year, six expect it to continue about the same as last year and the other five did not comment.

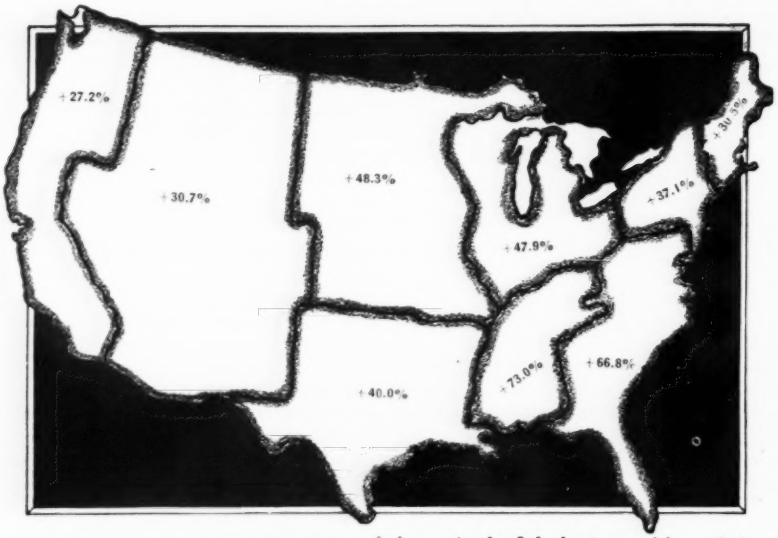
A central Iowa wholesaler reports that although it is rather dry in their section, they have not been hit as badly as the west and northwest sections. They expect the corn crop to be about 50 per cent of normal with greatly increased corn prices. Accordingly, they do not expect the drought to check business materially in their section.

A Kansas wholesaler reports that the prospects of a corn crop are practically nil. The State Bureau claims that despite the drought, more actual money was taken in on the wheat crop than was taken in on all crops last year. This wholesaler thinks that the general feeling of the people will decide the business trend for the balance of the year. Another Kansas wholesaler reports that the drought has slowed up business considerably, but nevertheless, the balance of the year will show improvement over last year although this improvement will not be as great as was originally expected.

West South Central States:—Two wholesalers in this section report an average increase of 40 per cent in July over the same month of last year and a decrease of 20 per cent over the previous month of this year. One expects August to show continued improvement over last year and the other expects it to continue about the same. One wholesaler states that the decline from the previous month is due to an unusually large volume of business in June.

Mountain States:—Three wholesalers in this section reported an average increase of 30.66 per cent over the same month of last year and a decrease of .33 per cent from June of this year. Two of these firms expect August to show continued improvement over the previous year while the third expects it to remain about the same.

Pacific States:—Six wholesalers in this section report an average increase of 27.17 per cent in July over the same month of last year and an increase of 4.83 per cent over June of this year. Four of these firms expect August to show continued improvement over the previous year, one expects it to remain about the same and the sixth expects it to show a decline from the previous year.



This map shows the average percentage of change in the July business of key wholesalers in each section of the country as compared with the same month in 1935.

KEY WHOLESALERS

	% of change as compared with the same month of last year.	% of change as compared with the previous month of this year	Prospects for next month compared with same month of previous year appear:				
			Better	The Same	Worse	No Comment	Total Reports
New England	+30.50	+10.37	2	5	0	1	8
Middle Atlantic	+37.10	+1.02	24	14	0	12	50
South Atlantic	+66.28	+5.86	3	1	0	3	7
East North Central	+47.92	+13.38	17	4	0	5	26
East South Central	+73.00	+42.00	0	0	1	0	1
West North Central	+48.33	+15.67	4	6	0	5	15
West South Central	+40.00	—20.00	1	1	0	0	2
Pacific States	+27.17	+4.83	4	1	1	0	6
Mountain States	+30.66	—.33	2	1	0	0	3
Total			57	33	2	26	118

Air Conditioning

Thirty-nine utilities report 542 installations made in July of this year, which compares with 355 in the same month of last year—an increase of 52.68 per cent. The horsepower was 4,353.17, which compares with 4,809.89 in July of last year—a decrease of 9.49 per cent. Complete figures for the seven months for these thirty-nine utilities show 1,844 installations this year against 1,331 in the same period of last year—an increase of 38.54 per cent. The horsepower was 37,300.28 this year as compared with 36,433.17 last year—an increase of 2.37 per cent.

The 111 installations made in the city of Chicago during July represent the largest month's business in any city that has ever been recorded insofar as the number of installations is concerned. In this total were 29 residential installations. Chicago's horsepower (752.25) also was the largest reported by any city during July. In the number of installations Cincinnati came second with 63, New Orleans was third with 52 and Oklahoma City was fourth with 39. New York City was second in horsepower with 708.00 and Washington, D. C., was third with 335.50.

Oil Burners

Forty-eight cities reported 2,999 permits in July of 1936, which compares with 1,937 in the same month of last year—an increase of 54.83 per cent. An increase was reported in Boston, where the number rose from 118 in July of last year to 365 in July of this year, a gain of 300 per cent. Baltimore, Washington and Portland, Oregon, also showed outstanding increases. Detroit showed a nice increase despite the fact that natural gas was made available to that city in the early part of July.

Stokers

Twenty-two cities reported 184 stoker permits issued in July as compared with 136 in the same month of last year—an increase of 35.30 per cent. Since permits are required on only a small portion of stoker installations, these figures do not represent the total number of stoker installations made in these cities. However, they assist somewhat in indicating the trend.

Building Construction

The Bureau of Labor Statistics reports that building activity as measured by permits issued showed a decided increase in June. The aggregate value of all building construction for which permits were issued during June was 34 per cent greater than during May.

The increase in June of this year was widespread, eight of the nine geographic divisions showing gains. The gain in residential buildings was especially pronounced. Reports from 1,362 identical cities show an increase of 45 per cent in the value of residential buildings, of 41 per cent in the value of non-residential buildings and of 7.0 per cent in the value of additions, alterations, and repairs to existing structures.

Compared with a year ago, June building activity showed an even more pronounced increase. The value of residential buildings as measured by permits issued in June, 1936, showed a gain of $39,800,000, or 142.0 per cent, over the corresponding month of 1935. Indicated expenditures for new non-residential buildings increased $21,000,000, or 81.0 per cent, and the value of additions, alterations and repairs to existing structures increased more than $9,000,000, or 51.0 per cent. The increase in total construction amounted to approximately $71,000,000 or 97.0 per cent.

Metal Prices

(Prices as of August 31, 1936)

New Metal Market—Domestic 9¾; Foreign, 9.65.

Electrolytic Copper—$9.75 cwt. Delivered Middle West—$9.875.

Lead—$4.50 cwt., St. Louis; $4.75 cwt., New York.

Ingot 5 lb.—St. Louis.

Zinc—$5.25 cwt.; $5.00 cwt., St. Louis.

Tin—$42.875 cwt., New York.

Brass Ingot—9½ c/l; 9¼ c/l Delivered.

Yellow Ingot—8 c/l; 7¾ Delivered.

Scrap Metal (Dealers Buying Prices)

Composition and steam brass—6¼ cwt.

Strictly Heavy Yellow Brass Scrap, Cast—4¾ cwt.

Mixed, Strictly cocks & faucets (Incl. ball cocks, etc.)—5½ cwt.

Light Brass, tubes, pipe, old sheets, etc.—4 cwt.

Old scrap lead pipe, etc.—$3.85 cwt.

Copper, sheathing and roofing, free of nails—6½ cwt.

Copper, boilers, tanks and other light materials—6¼ cwt.

Soldered joints—6½ cwt., f. o. b. Chicago.

Block tin—37½ cwt., f. o. b., Chicago.

Arousing new interest in Gas

CREATES NEW BUSINESS FOR YOU!

THE fact that "There's Nothing Like Gas" as a domestic fuel is being brought home to 90,000,000 people each year for *3 years* by full-page, four color advertisements in national magazines sponsored by more than 700 gas companies.

This unprecedented nation-wide advertising campaign for gas is already under way. Already it is arousing wide-spread new interest in gas as the perfect fuel for water-heating and house-heating as well as for cooking and refrigeration.

And what is the special significance of this nation-wide advertising for you? It offers you such opportunities for increased appliance sales—for profitable, *extra* business—as have never been possible before—for this campaign is reaching *your customers* through the national magazines they read every month! Get in touch with your local gas company and find out the many ways they can cooperate to help you make the most of this increased interest in gas.

Be sure this AGA Laboratory Approval Seal is on the appliances you sell.

AMERICAN GAS ASSOCIATION

"Modernize Your Home With Gas" is the message being carried into 14,000,000 homes regularly by the Gas Industry's advertising in national magazines.

There's Nothing Like GAS for

COOKING

The instant heat, higher speed and numberless shades of temperature, *only gas can provide*, give finer flavor to every kind of cooking!

REFRIGERATION

Gas makes possible silent, simplified refrigeration. No moving parts to wear out. Low operating cost.

WATER HEATING

Gas provides an abundant, dependable supply of hot water whenever you want it! Low cost and nothing to tend.

HOUSE HEATING

House heating with gas is absolutely effortless. No fuel to order. Nothing to bother with. No dirt, smoke or soot.

Federal Figures

- *Figures of Bureau of Labor Statistics show continued, healthy activity in building construction throughout the country*

Figures released by the Department of Labor show that while building activity as measured by the number of permits fell off slightly in July the value of residential construction increased 14 per cent and the value of additions, alterations and repairs is ahead by approximately 1 per cent. The usual trend at this season of the year is to have building activity decline, so the July figures are very encouraging.

Compared with a year ago, July figures are up sharply. The value of residential building shows an advance of 182 per cent over July 1935; the estimated value of nonresidential structures is up 38 per cent; and the value of remodeling permits has increased 30 per cent. The value of permits issued in the period from January to July 1936 amounted to $751,527,000, a gain of 78 per cent over the corresponding period of the previous year. In this same period, the value of new residential buildings stood at $335,039,000, up $191,069,000 or 133 per cent.

A comparison in activity between July and June shows that in July new residential building increased in number by 2.5 per cent and 13.7 per cent in estimated cost. Nonresidential building decreased in number by 7.1 per cent and 26.7 per cent in estimated cost. Additions, alterations and repairs were off 2.5 per cent in number but up 1.2 per cent in estimated cost. Also there was an increase of 163 per cent in the number of family dwelling units when July 1936 is compared with the corresponding month of the previous year.

Half Year Gains

During June of this year, the volume of residential building in 37 Eastern states reached its highest total for the past five years. Contracts awarded for new construction and for remodeling work totalled $73,604,600, or approximately 48 per cent greater than the same month one year ago. Total building in all sections of the country for the half year amounted to almost $335,000,000, or an increase of about 61 per cent.

Non residential building had an even larger gain, approximately 89 per cent over the first half of 1935. Educational, commercial and factory buildings were the largest factors in the non residential group.

Real Estate Market

The real estate outlook for a large proportion of the cities in the country is the most promising in many years according to the Twenty-Seventh Semi-Annual Survey of the Real Estate Market. This report covers 252 cities. The real estate market in general is more active than a year ago in 92 per cent of the cities in the country.

New home building is being absorbed readily. Several cities report that new building cannot keep ahead of the demand. Activity in the subdivision market is greater than last year in 65 per cent of the cities reporting. Only 1 per cent report a less active market.

Increased activity is shown by 100 per cent of the cities of over 500,000 population which were covered in the survey. All cities with one exception of over 100,000 population also report increased activity. The one exception declaring that the level is the same as last year.

Building Revival

A compilation of statistics which cover eight major indexes relating to construction indicates that the nation is entering into a widespread period of residential building revival. An index was obtained by using the monthly average of 1933 as 100. The index for June, 1934, was 82.3; that of June, 1935, was 248.6; and in June of this year it had risen to 742.9. All of the foregoing figures were based upon building permits. Contracts awarded on new residential construction also rose considerably in the last two and a half years.

Good News

News Note: Fedders Mfg. Co., 57 Tonawanda St., Buffalo, N. Y., plans to add equipment and an addition to their plant at a cost of $50,000, it has been announced.

* * *

News Note: American Blower Co., Dearborn, Mich., proposes to build a two-story addition. The cost of the new building and the equipment which the company plans to install, will be $55,000.

* * *

News Note: Capitol Mfg. & Supply Co., 520 East Wager St., Columbus, Ohio, has announced its intention to build an addition to the factory. The addition will cost $4,500.

* * *

News Note: Gardner-Denver Co., Quincy, Ill., is planning to construct a new foundry. The foundry is to be built at an estimated cost of $150,000.

* * *

News Note: Total shipments of Kelvinator refrigeration products for the ten months fiscal period ending July 31 show a 33.8 per cent increase over the same period last year, according to H. W. Burritt, vice president in charge of sales. Shipments of oil burners for that period exceed shipments for the entire previous fiscal year by 75 per cent.

* * *

News Note: Signal Electric Mfg. Co., Menominee, Mich., will build a two-story addition to its plant at a cost of $20,000, it was announced at a recent directors' meeting. Construction will start this month.

* * *

News Note: E. R. Nevel of E. R. Nevel Co., Lock Haven, Pa. reports that from present indications the business outlook for the fall season looks better than it has for several years and that other dealers in the section are busy.

* * *

News Note: American Brass Co., Waterbury, Conn., plans to install additional equipment in two additions to the plant at an estimated cost of $100,000.

* * *

News Note: The Chattanooga, Tenn. branch of Noland Co., Inc. has purchased the building it formerly rented. Purchase price was $40,000. The company plans to remodel the structure in the near future at an expenditure of $6,000.

* * *

News Note: The Heater Division, Motor Wheel Corp. has announced that shipments of the company's oil burning space heaters are up 400 per cent over the corresponding period of last year.

* * *

News Note: Harvey-Whipple, Inc., has reported that the sales volume of the company is ahead of any previous year to date.

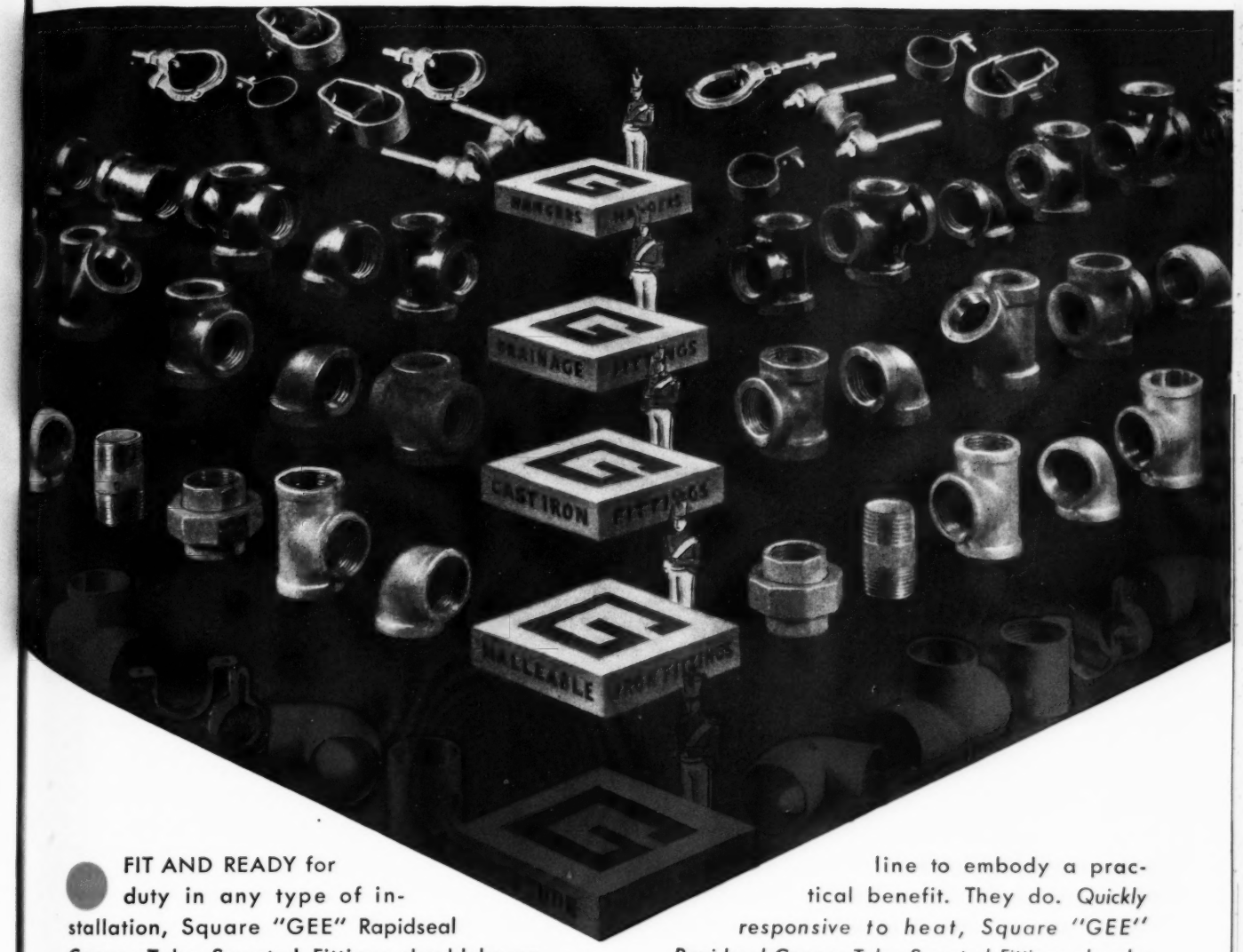
* * *

News Note: Independent Plumbing Supply Co., Memphis, Tenn., has remodelled its showrooms. This company has announced that it has a steady volume of work and all conditions point to its continuance.

* * *

News Note: Advance Plumbing & Heating Co., Los Angeles, Cal., is constructing an additional building on an 80 ft. front.

NO STRANGERS TO YOU!



FIT AND READY for duty in any type of installation, Square "GEE" Rapidseal Copper Tube Sweated Fittings should be no strangers to you. To loyal users of Square "GEE" Pipe Fittings, words of emphasis about their exclusive features are needless. Performance only is emphatic. On that basis, you would naturally expect these full-fledged members of a worthy line to embody a practical benefit. They do. *Quickly responsive to heat, Square "GEE" Rapidseal Copper Tube Sweated Fittings absorb, conduct and radiate heat seconds faster, (soldered joints cool as rapidly,) reduce installation time, and help you gain a wider margin on the job.* Use the term "Rapidseal" when ordering from your wholesaler. Write for Catalog.

THE GRABLER MANUFACTURING COMPANY
6565 BROADWAY • CLEVELAND, OHIO
Warehouses: NEW YORK • CHICAGO • PHILADELPHIA
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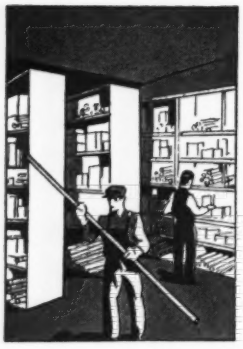
The Square "GEE" Line Includes:

STANDARD AND EXTRA HEAVY MALLEABLE FITTINGS • STANDARD AND GROUND JOINT UNIONS • RAIL FITTINGS • STANDARD CAST IRON STEAM FITTINGS • STANDARD AND PATENTED CAST IRON DRAINAGE FITTINGS • STANDARD AND EXTRA HEAVY BRASS FITTINGS • BRASS UNIONS • STEEL AND BRASS NIPPLES • HANGERS • FLOOR AND CEILING PLATES • RAPIDSEAL COPPER TUBE SWEATED FITTINGS

SQUARE Pipe — **"GEE" Fittings**

MALLEABLE, CAST IRON — DRAINAGE, BRASS, COPPER



Supply

Association Golf

• *Members of various associations gather to participate in tournaments—Season now drawing to a close, but all associations find increased turnouts—Many joint tournaments planned*

A large number of members and guests participated in the mid-summer meet of the Delaware Valley Trade Golf Assn. at North Glenside, Pa., August 11. At the dinner in the evening, William A. Brecht, president, Hajoca Corp., gave a short address and President Hackett conducted a brief business session. Prizes for the day were awarded at this time. The following scores were turned in by the members and their guests for the day's play:

R. B. Schmitz	83
W. H. Hill, Jr.	106–20–86
R. D. Knight	92–26–66
S. S. Pfluger	77
F. G. Newton	98–24–74
Al. Day	98
G. T. Sauter	89
E. A. Butler	88
James Fraser	87–16–71
Al. Butler	78
Robert Sovill	95–22–73
H. C. Peace	96–16–80
H. J. Carr	91–20–71
Jack Squires	100–16–84
Wilson Tyler	100–16–84
R. H. Gardner	80
E. L. MacWhorter	No card
C. W. Rainear	No card
Joe Maston	85
A. A. Ahlff	88–18–70
J. Nurney	101
E. F. Pierce	89
C. F. Hackett	99
R. Burns, Sr.	104–18–86
R. Burns, Jr.	98
Dan. Quinn	109–28–81
George Duncan	95–20–75
P. Maerkle	90
Al. Seither	78–10–68
G. H. Lang	101–20–81
Chas. Wall	87–18–72
W. N. Ash	90–18–72
Ray Groff	91–14–77
Merrill Blankin	89–10–79
Bart Reuter	112
C. P. Hackett	99–24–75
S. J. Radice	88–16–72
J. A. Dwyer	95–18–77
R. Scull	92
Clem Seay	99
C. Williams	94
H. J. Kleinman	97–18–79
J. F. Wright	94–16–78

Eastern Trade Golf

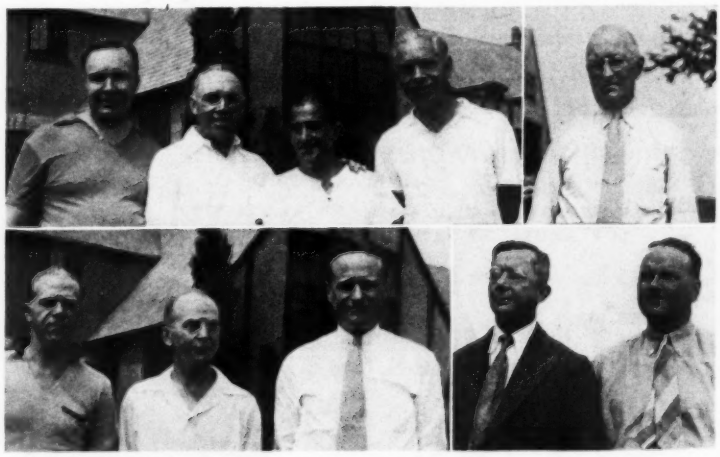
The Eastern Trade Golf Assn. held a tournament at Ridgewood Country Club, Ridgewood, N. J., July 23. Regular medal play prizes were won by the following: John Kjerner, L. W. Charlet, L. B. Harrison, Robert H. Smith, T. W. Powers, J. B. Garfield, Max Hermanns, T. A. Johnson, F. A. Hubert, W. L. Keplinger, Jr., T. M. Kellogg, Henry Sleik, G. M. Scott and J. C. McDonald. William Jackson won the guest prize.

Scores turned in for the day were as follows:

A. F. Hinrichsen	95	20	75
W. L. Fleisher	97	22	75
Llewellyn Power	85	9	76
W. H. Murphy	94	18	76
R. M. Meyer	86	9	77
A. R. Glore	93	16	77
C. M. Hunt	93	16	77
A. P. Keasbey	95	18	77
J. Coleman	95	18	77
J. F. Reed	95	18	77
W. A. Davis	92	14	78
R. E. Ryan	93	15	78
H. Rose	94	16	78
A. W. Mohrman	95	16	79
Harold Townsend	97	18	79
C. Gabosch	98	19	79
L. S. Rothwell	94	14	80
J. F. Hyde	95	15	80
R. M. Hall	113	33	80
Al Engle	101	20	81
R. V. Sawhill	108	27	81
R. W. Bookhout	110	29	81
E. G. Williams	99	17	82
G. E. Olsen	104	22	82
E. A. Kerbey	113	29	84
H. P. Heil	119	35	84
W. H. Carrier	108	23	85
R. Van Siclen	118	23	85
C. V. Haynes	103	17	86
A. T. Miano	109	23	86
E. N. Keyes	111	25	86
D. O'Neil	109	21	88
J. Everetts	133	43	90
J. F. McEntee	113	22	91
C. S. Wood	119	22	97

Joint Tournament

A joint meet of the Plumbing & Heating Trades Golf Assn. of New Jersey and the Plumbing & Heating Golf Assn. of New York was held August 11, at the Upper Montclair Country Club, Clifton, N. J. Seventeen members and guests of the New Jersey association



Taken at the Delaware Valley Trade Golf Assn. meet. Top row, left to right: J. Fletcher Wright; James Fraser; S. John Radice, captain; S. S. Pfluger; and H. J. Kleinman, secretary. Bottom row: George H. Lang; Bart Reuter; Charles G. Wall; William A. Brecht; and Wilson Tyler

Let's GLORIFY *the American Home*
THERE'S BIG PROFIT IN IT!

★ What do you do when you install a new and thoroughly modern General Electric Kitchen? You *glorify* an American home.

What do you do when you replace an old-fashioned heating system with a modern one? You *glorify* an American home.

And now comes the Nu-Bidet to *glorify* the bathroom. As necessary as your tooth brush or the bathroom itself for downright cleanliness and personal hygiene, the Nu-Bidet is the greatest advancement in bathroom accessories in the past twenty-five years. It is ultra-modern and "New American" from start to finish.

And from a home modernization standpoint, here is what the Nu-Bidet has done and will do. One plumber got a job for $785, because when he sold a Nu-Bidet it made everything else in the bathroom look terribly out of date and so the whole room was modernized. Still another sold 10 Nu-Bidets in two days and, of course, will get plenty of modernization work from those sales.

Builders and developers are using the Nu-Bidet as an ultra-modern drawing card in the sale of new houses.

You, too, can make big profits not alone in the sale of the Nu-Bidet but in modernization jobs that are the direct result of the sale of a Nu-Bidet because it gets your prospect in a buying mood, that's important.

Let's *Glorify* the American Home. The Nu-Bidet will help do it. There's Big Profit in it.

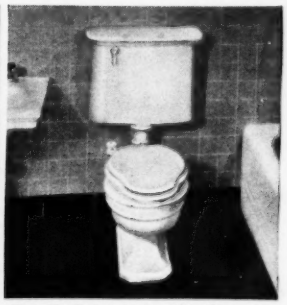
WHAT IS THIS NU-BIDET? READ THIS!

The Nu-Bidet is a thoroughly modernized Sitz Bath... and more. The following uses make it a safeguard to health and as necessary to personal hygiene as your tooth brush or the bathroom itself.

Sitz Bath for personal hygiene and treatment of rectal disorders. Spray for same purpose and feminine hygiene. Attachment for douche, enema and hydrotherapeutics, entirely eliminating the old rubber bag method.

The Nu-Bidet can be installed on any standard size toilet bowl in less than two hours. It will convert the ordinary bathroom into one that is truly hygienic at a small investment. Use coupon now.

The Nu-Bidet lifts up and stands against the lid when not in use.



The Nu-Bidet looks like the average toilet. No extra space required.

The Nu-Bidet is a complete unit of seat, Nu-Bidet and lid in one assembly, which replaces the regular seat and lid. *It is equipped with a specially designed and patented vacuum breaker and also a specially designed siphon breaker, making back siphonage or a cross connection impossible.*

The Nu-Bidet (BEE-DAY)

KLEENSAN CORPORATION • 341 Park Avenue • New York

KLEENSAN CORP., 341 Park Avenue, New York, N. Y. E-9

Please send brochure, "Your Answer to a Long-Felt Need."

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Address_____ City and State_____

Jobber_____

Address_____ City and State_____

Jobber ☐ Retail Plumber ☐

A personal message from the Vice-president of our company to the executives of oil burner distributor organizations . . .

"It's the Burner and not the Sales Talk that Makes Successful Distributors in the Oil Burner Business."

"As a distributor—you go into the business to make money. If you have the right factory connection with the right burner you'll probably make it, if you don't, you won't.

"In fifteen years we've discovered that good names and sales promotion can help a good burner along, but you can't build a profitable business around a cheap burner.

"We build a quality burner which can definitely be sold at a profit because of its exclusive features and performance. Yet, it costs little more than a cheap job with less merchandising appeal.

"It's servicing that ruins dealers and kills customers.

"Our executives personally contact the trade. We think the oil burner business of any distributor is that important.

"We believe we know how to make money for distributors because our distributors are making it. If you need that kind of a dealership—write us."

(Signed) CHAS. A. REIF,
Vice-president.

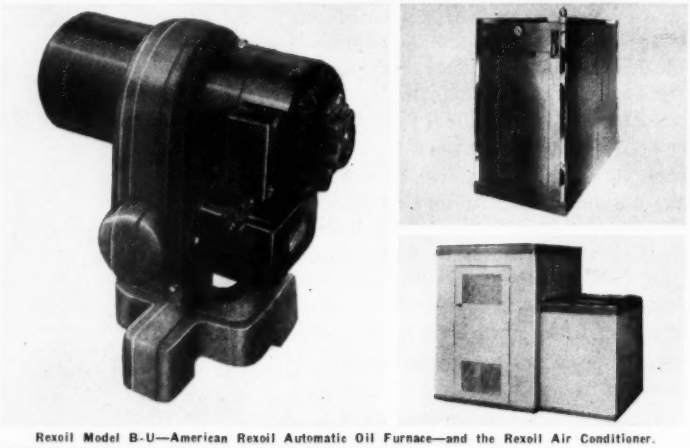
REIF-REXOIL, INC.
BUFFALO, N. Y.

Manufacturers of Rexoil Conversion Burners, Boiler Units, Furnace Units, and Air Conditioners.

Automatic
REXOIL
Oil Burner

Automatic
REXOIL
Oil Burner

Fifteen Years' Exclusive Experience Built Into This Equipment



Rexoil Model B-U—American Rexoil Automatic Oil Furnace—and the Rexoil Air Conditioner.

Fifteen Years' Experience Built Into Rexoil Sales Promotion

MEMBER OIL BURNER INSTITUTE OBI

Rexoil Movies Tell The Story of Rexoil's Fifteen Years' Performance To The World

played with thirty-three members and guests from New York. Those winning prizes were as follows:

Class A—D. Sampson, F. C. Stille, James S. Weaver and G. R. Acheson. Class B—Ben Fassler, A. R. Gasewind, C. P. Gabosch and W. C. Clift. Class C—Lew Mauser, D. B. McDonald, H. S. Officer, W. M. Doncourt and F. C. Allen. Class D—C. E. Kreidler, Fred Brutschy, I. J. Ingram, T. P. Layer and E. F. Disbrow.

Guest prizes were won by: C. Madden, County Supply Co., Inc., Hackensack, N. J. and R. Van Siclen, J. D. Johnson, Inc., 271 Atlantic Ave., Brooklyn, N. Y. In September, the Plumbing & Heating Golf Assn. of New York will join with the Connecticut Plumbing & Heating Golf Assn. at the Pelham Country Club, Pelham Manor, N. Y.

N. E. Golf

A meeting of the New England Metal Products Golf Assn. was held at Kernwood Country Club, Salem, Mass. July 30. Prize winners for the day were as follows: Class A—Werner Day and George Egan; Class B—William Hayes and Stanley G. Cady; Class C—Arnold Abbott and John S. Nicholl; and kickers prizes went to Robert McKeown, Jr. and Thomas J. Swan.

Scores turned in for the day were as follows:

W. A. Abbott	80	23	67
S. G. Cady	86	19	67
J. H. Carr	113	30	83
M. G. Chamberlin	93	24	79
W. B. Day	80	6	74
P. W. Donoghue	88	13	75
G. E. Egan	81	7	74
G. F. Elliott	107	27	80
W. Hayes	78	14	64
F. E. Johnson	92	19	73
R. McKeown	87	12	75
J. J. Milliken	90	16	74
F. A. Monroe	101	21	80
J. H. Mullen	106	21	85
H. W. Murdock	103	19	84
J. S. Nicholl	99	24	75
J. Riley	106	27	79
J. G. Ross	83	12	71
T. J. Swan	91	16	75
W. H. Taylor	109	21	88
W. R. Weiss	110	30	80

Heating Trades Golf

The July meet of the Plumbing & Heating Trades Golf Assn. of N. J. was held July 16 at the Crestmont Club, West Orange, N. J. J. F. McCauley was winner of the cup with a low net score of 78. Other cards turned in:

H. Baumgartner	102	11	91
C. M. Pierce	109	18	91
A. R. Gasewind	111	15	96
F. J. Engelberger	104	11	93
F. Dodson	125	26	99
A. B. Cashman	94	14	80
W. H. Lee	106	15	91
J. F. McCauley	98	20	78
F. L. Robinson	94	10	84
I. J. Ingram	105	22	83
D. Snyder	97	12	85

Eastern Supply

J. M. Chaplain has resigned from the office of president of the Eastern Supply Assn. This move was prompted by Mr. Chaplain's severing his connection with J. M. Chaplain, Inc. and establishing an office as manufacturer's agent. The duties of president have been taken over by H. T. Richardson, first vice president of the association.

H. T. Richardson

Quaker City Outing

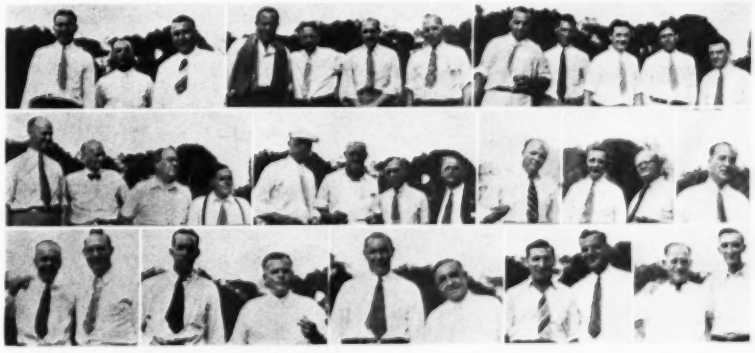
Approximately 125 attended the annual outing of the Quaker City Jobbers Assn., August 19, at Laurel Springs, N. J. Entertainment was provided in the form of quoits, cards and baseball. Several wrestling matches were staged during the day as well as a boxing contest between Mark Shapiro and Joe Weinstein. During the day a chicken dinner was served. The committee in charge of the day was as follows: Mark Shapiro; Clem Seay; Vic. Siexas; David Schrull; Rufus Palmer; H. Harrison; Al. Lentz; Larry Agostini; Morris Lehman; and H. R. Kuehner.

Certified Ratings

As a guide to buyers of cooling equipment, many manufacturers have run tests on their lines of condensing units in accordance with the requirements of the American Society of Refrigerating Engineers "Standard Method of Rating and Testing Mechanical Condensing Units." Ratings derived from these tests are certified by the manufacturers with the Refrigerating Machinery Assn. or with the National Electric Manufacturers Assn. After these ratings have been accepted by the associations, the manufacturer is in a position to state in his advertising and elsewhere that the equipment offered for sale has been tested and is rated in accordance with the standards of the American Society of Refrigerating Engineers.

Timken Meetings

Booming residential building throughout the United States will send fall and winter sales of oil-burning equipment to new heights, dealers and salesmen were told in eight regional meetings just held by the Timken Silent Automatic Co. The eight meetings were held in Minneapolis, Duluth, Chicago, Detroit, New York City, Philadelphia, Boston and Syracuse.



Taken at the outing of the Quaker City Jobbers. Top row, left to right: H. N. Madden, U. S. Radiator Co.; R. D. Bitzer, R. D. Bitzer Co.; Ed. Moore, vice president, Bell & Gosset Co.; Mark Shapiro; J. E. Noonan, American Radiator Co.; Rufus Palmer, association treasurer; V. E. Nelson, American Radiator Co.; E. Costa; Brad. Jones and E. J. Conoran, both of Standard Sanitary Mfg. Co.; W. Carrollton, American Radiator Co.; and H. H. Held, Kohler Co. Middle row: R. F. Turner, Guy Smith, Harry Walther and Sam. Silverstein, all of H. B. Smith Co.; Geo. Wobensmith; Robt. Savill, Thos. Savill & Sons; Robt. Vessey and Wm. Morgan, both of Bymore Sales Co.; Harry Erickerson, General Fittings Co.; Al. Miller, and Chas. Hackett, both of Pierce Butler Radiator Corp.; and H. T. Norton, Pennsylvania Range Boiler Co. Bottom row: S. Z. Cole, Republic Brass Co.; Wesley Heins, Grabler Co.; Geo. Harberger; Ben. Fredericks, vice president, Eastern Foundry Co.; C. J. Morrisey and Jack White, both of Chase Brass & Copper Co.; Max Weinstein; Wm. Kellerber; Wm. Bergmiester and Wm. Simms, both of Thomas Devlin Mfg. Co.

Robinson-Patman Bill

(Continued from Page 64)

commission can fix such quantity limits, it must find

'that available purchasers in greater quantities are so few as to render differentials on account thereof, unjustly discriminatory or promotive of monopoly.'

"It is obvious that the purpose of this provision is to prevent a seller from fixing a discount upon very large quantities—so large that the average or smaller purchaser would never be able to purchase in such quantities,—thereby placing the latter under a discriminatory disadvantage as against such larger purchasers.

"Inasmuch as this situation is one that does not affect the majority of sellers, it will not be dealt with at length in this opinion.

"It is, however, important to say that highly expert legal opinion has been expressed to the effect that this provision is unconstitutional, because the power thus given to the commission is not defined or limited by proper standards, but is left to the uncontrolled discretion of the commission.

"Legal authorities exist, in decisions of the Supreme Court, which seem to support this view of unconstitutionality.

"Another respect in which the new law differs from the old, is that in the latter, price discrimination was forbidden only

'where the effect of such discrimination may be to substantially lessen competition or tend to create a monopoly in any line of commerce';

whereas in the new law there is added to the words above quoted, the further words:

'or to injure, destroy, or prevent competition with any person who either grants or knowingly receives the benefit of such discrimination, or with customers of either of them.'

"The effect of this change in the new law is that price discriminations are forbidden not only where they substantially lessen competition or tend to create a monopoly, but also where the effect may be to injure, destroy or prevent competition—thus adding the new element of injury to a customer of either party engaged in such discrimination.

"For the present purpose of this opinion, it does not seem necessary to dwell upon this additional provision, because it seems likely that it does not add materially to the former law.

"It is important to point out that in the new law there is contained a further provision that in any prosecution brought by the commission on the charge that a forbidden price discrimination exists, then when the commission furnishes any proof of that fact, the burden of rebutting such proof is placed upon the person charged with such violation, but with the right to such person to show

'that his lower price . . . was made in good faith to meet an equally low price of a competitor.'

"This provision is entirely new, and its full effect and meaning is open to doubt. For purposes of present action it seems proper to say that it gives considerable latitude for lower prices and for the granting of such quantity discounts upon sales made on a fair and proper basis and in good faith, for the true purposes of directly meeting an equally low price of a competitor.

"The only advice that can now be given on this point is that the exercise of sound common sense and *good faith*, ought to be a sufficient guide until there shall be some definite and authoritative opinion expressed.

"Another important and new provision is that which relates to the payment of brokerage.

Incentive for New Law

"The debates in Congress indicated that this constituted an important incentive for this new law. Great emphasis was placed in the hearings before the House Committee and the debates in Congress, upon the contention that large purchasers had established the practice of buying only through a brokerage concern to whom commissions had to be paid by the seller; and it was alleged that such brokers were often owned and controlled by the buyer in question, so that the payment of commissions to such brokers by the seller, resulted in the same being paid over by the broker to the buyer, and therefore constituted a price discrimination in favor of such buyer. The new law undertakes to prohibit this practice. This provision (Sec. 2 (e)) is expressed in language so involved and confusing, so that doubt exists as to its legality or constitutionality. Nevertheless, its true import seems to be reasonably clear and, therefore, buyers who are engaged in such practice ought to make immediate notice of this new provision and consult their own counsel concerning the same.

"Another and very important new provision (Sec. 2 (d)) is that which forbids payments to a customer as compensation

'for any services or facilities furnished by or through such customer in connection with the processing, handling, sale, or offering for sale of any products or commodities manufactured, sold or offered for sale by such person, *unless* such payment or consideration is available on proportionally equal terms to all other customers competing in the distribution of such products or commodities.'

Section 3

"A somewhat similar provision is found in Sec. 3 of the new law. This section was inserted at the very end of the debates in the Senate. It previously constituted a separate bill known as the Borah-Van Nuys Bill. Because of the fact that it thus constituted a separate bill stated by its principal author, Senator Borah, as intended to cover the entire situation,—it has resulted that this new section overlaps the provision just quoted (Sec. 2 (d)) and in doing so confusion has resulted.

"This seems true for the reason that Section 3 forbids any person:

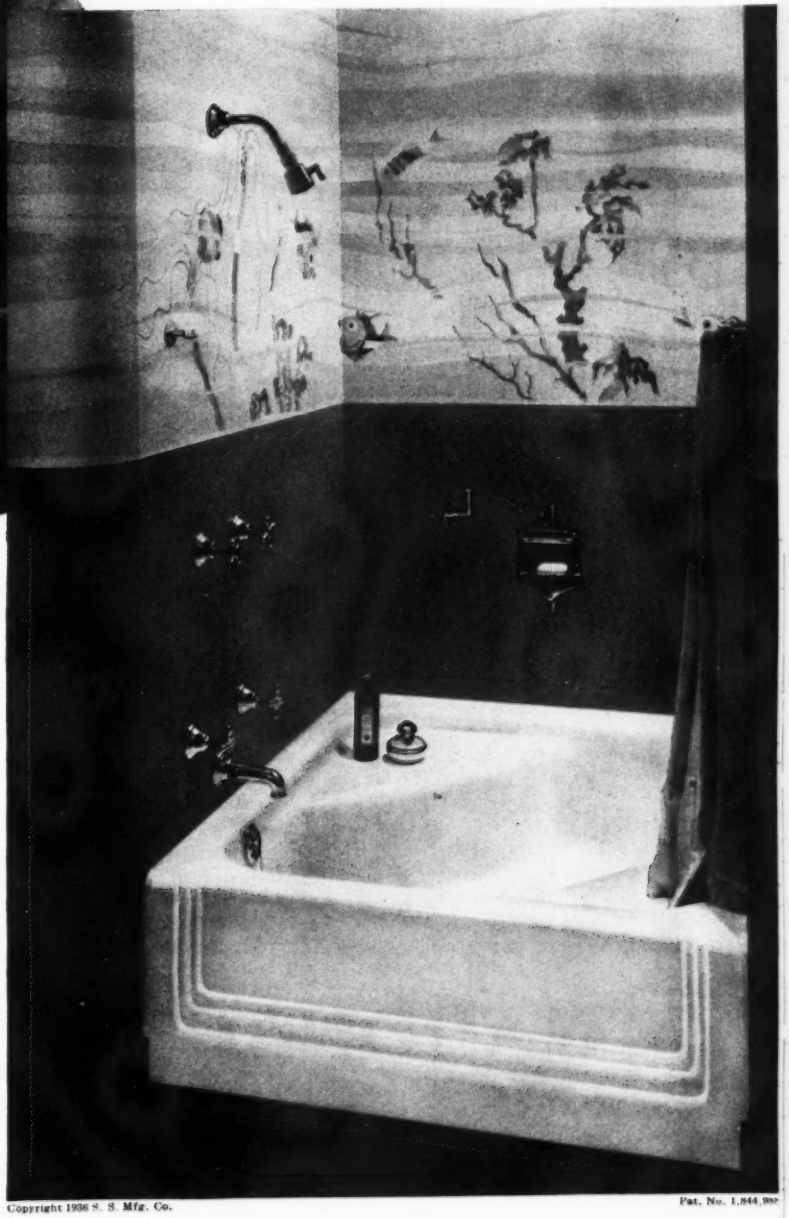
'to be a party to, or assist in, any transaction of sale, or contract to sell, which discriminates to his knowledge against competitors of the purchaser, in that any discount, rebate, allowance, or advertising service charge is granted to the purchaser over and above any discount, rebate, allowance, or advertising charge available at the time of such transaction to said competitors in respect of a sale of goods of like grade, quality, and quantity.'

"A comparison of the two quoted sections clearly shows an overlapping and a confusion. Each of them is directed to meet the situation disclosed in the hearings held by the committee wherein testimony was given tending to show that it is a very common, if not universal, practice upon the part of large manufacturers to make payments to retail customers who give to such manufacturers facilities for window-displays and counter-displays and other like facilities, in order to advertise the products of such manufacturer; also similar payments by manufacturers to wholesale customers for promotional facilities afforded by them in having their salesmen make special efforts to promote the sales of the products of such manufacturers, and in giving other like promotional cooperation to such manufacturers.

"Under Sec. 2 (d) such payments are forbidden unless 'available on proportionally equal terms to all other customers, etc.'

"Under Sec. 3, such payments are forbidden unless

"Standard" certainly started something with that Neo-Angle Bath



Yes sir, "Standard" *did* start something by introducing the sensational Neo-Angle Bath at a time when there was little or no public interest in Plumbing Fixtures. It started the public talking from coast-to-coast about "this new, square bath."

It started home owners thinking about new Plumbing Fixtures. It started Architects and Builders planning and building new bathrooms designed around the Neo-Angle. It started people visiting "Standard" showrooms.

Best of all, it started people buying again from Master Plumbers. Only Master Plumbers can sell the "Standard" Neo-Angle Bath. Only "Standard" can furnish it. Write for literature today.

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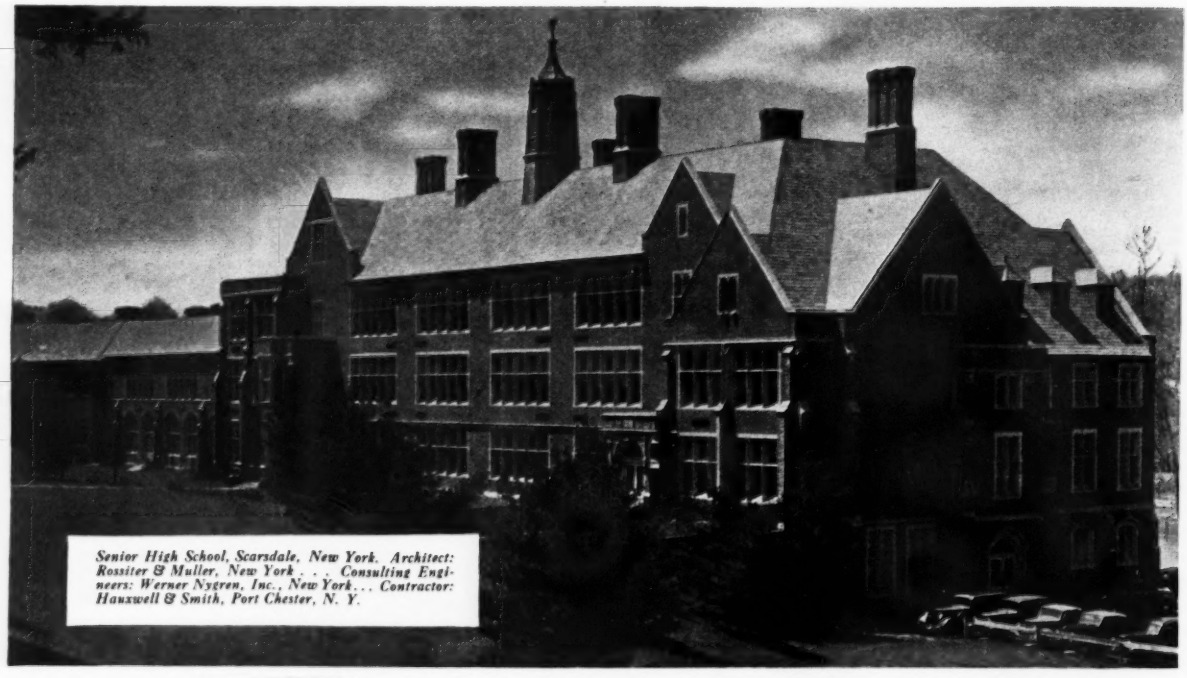
Pat. No. 1,844,992

Standard Sanitary Mfg. Co.

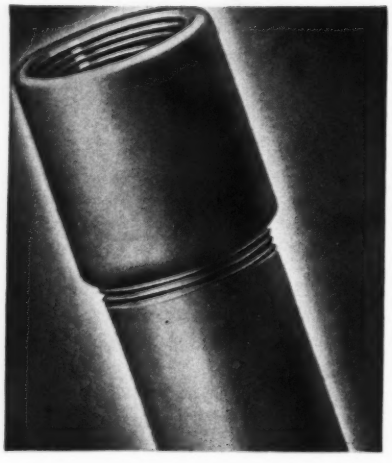
PITTSBURGH, PA. *Division of* AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

Here again . . .

In this beautiful Scarsdale School



Senior High School, Scarsdale, New York. Architect: Rossiter & Muller, New York . . . Consulting Engineers: Werner Nygren, Inc., New York . . . Contractor: Hauxwell & Smith, Port Chester, N. Y.



. . . NATIONAL PIPE

THE Senior High School, Scarsdale, New York, adds another to the long list of outstanding educational institutions in which the choice of NATIONAL Pipe has been guided by a determination to permanently safeguard the original investment. NATIONAL Pipe is used extensively to reduce maintenance and depreciation costs to a minimum.

Take a cross-section of the country's finest buildings—the most representative in design, construction, and materials—and note how widely NATIONAL Pipe has been used. You will find it in every type of pipe service, for NATIONAL has developed superior pipe for every need.

NATIONAL Pipe is produced by the world's largest and most experienced pipe manufacturer. To the architect, engineer, and builder NATIONAL offers a superior service for plumbing and heating, power, etc.,—pipe of every type, grade and size, but all of one quality — the highest.

NATIONAL TUBE COMPANY

PITTSBURGH, PA.

Columbia Steel Company, San Francisco, *Pacific Coast Distributors* · United States Steel Products Company, New York, *Export Distributors*

UNITED STATES STEEL

'available at the time of such transaction to said competitors in respect of a sale of goods of like grade, quality, and quantity.'

"It will be observed that in the former section the language used is 'available on proportionally equal terms,' while in the latter section the language used is merely 'available.'

"Setting aside for the time being, this overlapping and difference of expression, it seems clear that both sections aim at forbidding manufacturers or sellers generally from making payments for such facilities, unless similar payments are made available to all competitors of the customer receiving such payment.

Constitutionality

"Grave doubt has been expressed whether either of these provisions is legal or constitutional. This doubt is based upon the contention that it is difficult, if not impossible, for a seller, even though acting in the best of good faith, to determine this question of 'availability.' It is asserted that where a seller, acting in good faith, deems it to his best interest to procure from a customer, advertising and promotional co-operation and facilities of the kind above mentioned, and to pay the customer a reasonable price therefor,—it is in actual practice difficult, if not impossible, for him to undertake to obtain and pay for similar service or facilities from *all* of his customers and to determine the proper payment to be made therefor. Competent legal opinion has been expressed that such a provision is unconstitutional as being violative of due process of law, in that it compels a seller, against his best interests, and against his will, to enter into contracts requiring payments to *all* of his customers, merely because such seller, in good faith, deems it to be to his interest to obtain such services and facilities from particular customers who, in the seller's honest judgment, can alone furnish to him the services and facilities mentioned.

"It is contended, moreover, that these provisions are illegal and unconstitutional on the ground that the requirement of 'availability' is too indefinite, and is devoid of proper standards, whereby such availability may be determined, not only on the part of a seller striving to conform with such provision in good faith, but also upon the part of the Federal Trade Commission and of the Circuit Court of Appeals in reviewing any orders issued by the commission.

"A more substantial objection has been asserted with respect to Section 3, for the reason that this section contains a provision making the violation thereof a criminal act punishable by fine and imprisonment.

"Inasmuch as criminal laws are subject to the most strict construction as to meaning, standards, etc., it is asserted upon responsible legal basis that because the element of 'availability' contained in this section does not carry with it any provision as to the standards by which such availability may be determined, it is unconstitutional and unenforceable.

"Until, however, further time has elapsed so that some official interpretation may be given with respect to these two sections,—any company or firm having this question before it, ought to consult with its own counsel before taking definite action.

"For the present, it is proper to say that any company or firm now confronted with the necessity for making a decision with respect to its practice of making payments to customers for advertising-service, window-displays, promotional activities and other like services—ought to give prompt attention to its situation if such payments are in fact not genuine payments for the services thus received, but are in excess of the value of such services, and are purposely made excessive in order thereby to give to the customers to whom such payments are made, a secret rebate amounting to an unfair discrimination. In other words, if these payments are not bona-fide, but are mere camouflages for secret rebates, then a different situation exists, and great care ought to be exercised lest the new law shall be violated.

Summary

"Summarizing the situation with respect to the new law as above set forth, it is evident that Congress intended to place obstacles in the path of very large business concerns, such as chain-stores in particular, so as to take away from them the advantage which it is alleged they have possessed, namely, that by virtue of large purchasing power, they are enabled to make their purchases at much lower prices than their smaller competitors. It was asserted in Congress that the growth of chain-stores has been very great, and that it constitutes a menace to the continued existence of the vast number of smaller and so-called independent competitors. It has been asserted that the strong position gained by the chain-store system has been detrimental to the prosperity and welfare of smaller competitors generally, and particularly in small communities. This is based upon the assertion that small business concerns are unable to meet the competition of these larger concerns, and that this is due largely to the power possessed by the latter of making their purchases in such large quantities, that they are able to obtain very low—and it is said, discriminatory—prices which the smaller concerns cannot afford to meet. It is further charged that damage is thereby caused, especially in smaller communities, through the fact that the units of chain-store systems situated in such smaller communities, are really not a part of such communities, but are owned by companies having headquarters in the great financial centers, with the result that the money earned in such units does not remain in the communities in which they are situated, and thereby benefit such communities, but are transmitted to the headquarters of the particular system.

"Except for the element of 'brokerage' above discussed, it is generally agreed that the main objective of the new law, was to curb the growth and power of the chain-store system. As stated at the outset of this opinion, it is important to bear this fact in mind when thought is given to any changes in policy in order to conform with the new law. Obviously, this does not furnish an adequate criterion upon which to base a decision as to such change of policy, but it will be helpful to bear that fact in mind when consideration is being given to any such change in policy.

"In the main, and pending a clearing up of the present confused situation, a safe guide ought to be an honest and sincere study of any existing problems so as to determine whether as a matter of sound good sense, any policy under consideration does in true substance and fact, amount to a hurtful or injurious discrimination, not supported by sound business principles."

The remaining portions of the Bill itself continued from the July issue will be found on page 179.

Dealers Meet

At a dinner and meeting held July 28, at the Governor Clinton Hotel in New York City, more than 150 dealers from New York and the surrounding territory were the guests of the Branford Oil Burner Division of the Malleable Iron Fittings Co. Phillip R. Besserman, New York representative, outlined the history of the company.

Gas Pilots

When natural gas was brought to Detroit the problem was raised that owners of oil burners equipped with gas ignition would have their pilots ineffective for use with the new gas. Frank H. Dewey, regional director, Oil Burner

Institute, and the Oil Heat Committee in Detroit canvassed the situation and after conferences with municipal officials reached an agreement with the gas company whereby the company will make the necessary changes at its own expense. The work will be done by the oil burner companies.

Official Honored

Lester J. Nichols, secretary of the Malleable Iron Fittings Co., Branford, Conn., was given a testimonial dinner Aug. 13 upon his completion of 70 years with the company. Mr. Nichols entered

L. J. Nichols

the employ of the company in 1866 as shipping clerk and bookkeeper. At that time it was his intention to work only one year in order to earn a sufficient amount to enter Yale College, but at the end of that time the owners of the company prevailed upon him to stay.

The testimonial dinner was attended by directors, officers, the office and factory force as well as department heads of the company.

Water Heating Units

Because of the different varieties of units designed to convert non-automatic water heating equipment to automatic operation, a subcommittee of the American Gas Assn. has completed the first draft of a new set of listing requirements. It is intended that the new standard will be published and available by the middle of 1937 and should become effective by January, 1938.

Flood Relief

An interesting side light on the March floods which struck western Pennsylvania has been revealed by Gardner Bros. Co., Inc., plumbing and heating jobbers of Ellwood City, Pa.

One of the trucks that carried the water into the flooded area

The first pure, safe drinking water to be brought into the flooded Pittsburgh area was delivered in range boilers taken out of the Gardner company's stock. Four trips were made, carrying 450 gal. each trip. One load was delivered to Braddock, Pa., while the other three loads went to McKees Rock.

Meetings Concluded

Penn Electric Switch Co., Des Moines, Iowa, concluded its 1936 series of dealer meetings with a two day session in Denver, Col., August 24-25. "Our 1936 series of meetings was the most extended and widely attended that we have ever staged," said Nelson B. Delavan, vice president and director of sales.

Expansion Program

The Cleveland factory of Iron Fireman Manufacturing Co. has been increased in size by 50 per cent through the erection of two additions. One of these additions is 172 ft. by 211 ft. in size. Architectural treatment is described as being of the modern type

The company conducted a series of nineteen district meetings during the summer which were attended by dealers, salesmen and service men. Executives who attended the meetings were: E. C. Sammons, vice president; C. T. Burg, general sales manager; and Dale Wylie, sales promotion manager.

View of the new addition to the Cleveland factory of Iron Fireman Mfg. Co.

Business Changes and New Incorporations

Stokerunit Co., Milwaukee, Wis., has acquired the plant of the former Milwaukee Grey Iron Foundry and will remodel the premises to make automatic stokers.

The Walker Mfg. & Sales Corp., has announced the removal of its plant from 613 Locust St., St. Joseph, Mo., to 1711 Penn St. in that city.

C. I. T. Corp., New York City, has opened a local office in Canton, Ohio. C. Vance Anderson is in charge of the office and has N. W. Pope associated with him.

C. E. Carr and Co., Columbus, Ohio, has moved its plant from 163 N. Fourth St. to property purchased at 49-53 East Naghten St. The new quarters provide 11,000 square feet of floor space.

H. J. Somers Inc., has announced that the company has moved to a new address at 6063 Wabash Ave., Detroit, Mich.

National Radiator Corp., Johnstown, Pa., **Nu-Way Corp.,** Rock Island, Ill., and **Cleveland Steel Products Corp.,** Cleveland, Ohio, have adopted a co-operative agreement for the manufacture of oil burning units.

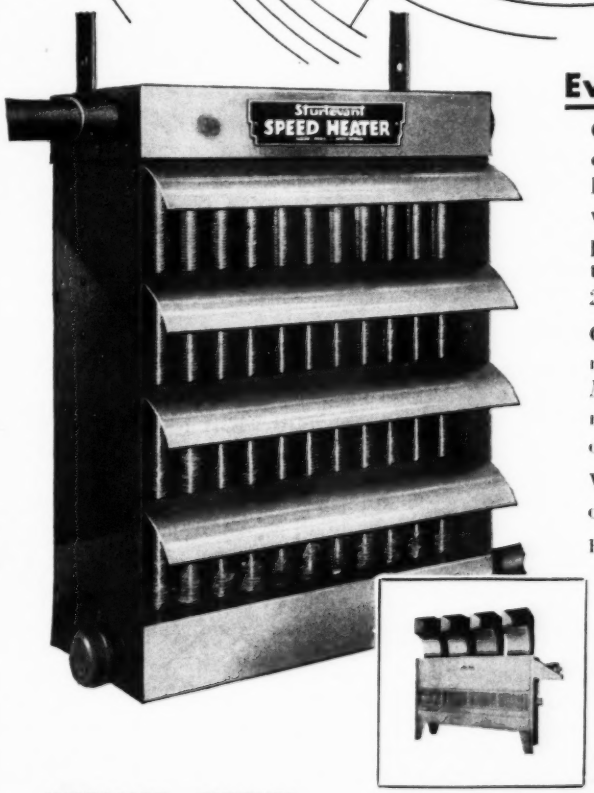
Kingston-Conley Electric Co., has announced that the factory and offices of the company have been moved from Jersey City, N. J., to 68 Brook Ave., North Plainfield, N. J.

Price Plumbing Supply Co., Inc., has been established in Middletown, Conn., with an authorized capital of $50,000. Morris Price heads the company.

Personals

Elwood S. White, has been elected president of United States Radiator Corporation, it has been announced. Mr. White, who joined the corporation April 1, 1936 as chairman of its operating department, was formerly president of Taco Heaters, Inc. He succeeds Henry T. Cole, who has now been elected chairman of the board.

A. C. Bader has joined Gar Wood Industries, Inc., where he will have charge of all architectural activities in the metropolitan area of Detroit. He was appointed to the position by F. E. Ritzenheimer, branch manager of the air conditioning division.



That's What We Guarantee Every Speed Heater to Withstand

Our standard test on every Speed Heater heating element before it gets a final okay runs up to 1000 lbs. hydrostatic pressure. When that doesn't affect it we know that the Speed Heater is assured of a leak-proof life. And we back up this statement by guaranteeing every one to withstand steam pressures up to 200 lbs. per square inch!

Other features include (1) *Easy Piping.* Supply and return connections on both sides of the heater. (2) *Maximum Headroom.* You can put Speed Heaters right up against the ceiling. (3) *Immediate Shipment* of all popular voltages.

Write for a copy of Speed Heater Catalog No. 396-3 or the Rexvane Heater Catalog No. 395-2.

B. F. STURTEVANT CO., Hyde Park, BOSTON, MASS.
Branch Offices in 40 Other Cities

B. F. Sturtevant Company of Canada, Ltd.—Galt, Toronto, Montreal

← **Rexvane Heaters**

For floor, wall or ceiling installation. A wide variety of types and sizes up to 1,421,000 B. T. U. (standard rating)

INSTALLED QUICKER THAN DIRECT RADIATION. COST LESS...HEAT BETTER

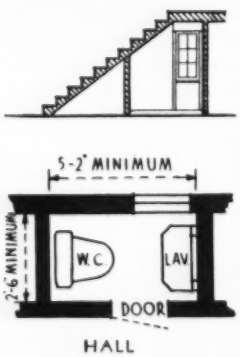
Sturtevant
Speed Heaters

STURTEVANT SPEED HEATERS ARE DISTRIBUTED BY CRANE CO.

The Lavette at the right shows a K-4970-BA *Gramercy lavatory and the compact reverse-trap Bolton closet* K-5710-PB.

Extra profits in extra space

ANOTHER CLOSET, ANOTHER LAVATORY, ANOTHER PROFIT—WHEN YOU PUSH KOHLER LAVETTES!



Above is a section through a stairway showing how a small amount of space under it can be utilized. A floor plan with minimum dimensions is also shown.

• Here's a wide-open field for any Master Plumber! Almost every house has room for a useful, down-stairs Lavette (a Kohler-fitted guest and utility washroom). Check up on the *extra space* the next time you look at a set of plans or visit a prospect — for *extra* sales.

You don't have to sell the *idea* of a Lavette to home-owners. They appreciate the convenience of an extra washroom at once. And it's easy to sell them Kohler fixtures too. The large selection of lavatories and closets in the Kohler line makes it easy for clients to pick just what they want. And *you* know that Kohler quality keeps them happy from now on!

A Lavette adds more than its cost to the value of any house, as any good real-estate man knows. It takes little room — under-stair and closet space as small as 2'6" by 5'2" is enough.

Master Plumbers everywhere are boosting their Kohler closet and lavatory sales by plugging Lavettes. Why not do the same with your own business? Write for details to Kohler Co. *Founded 1873.* Kohler, Wis. *Shipping Point,* Sheboygan, Wisconsin.

KOHLER OF KOHLER

PLANNED PLUMBING AND HEATING

Kenneth Chamberlain, formerly connected with the Gas Light Co. of Worcester, Mass., has been appointed sales representative in the Boston territory of the American Gas Products Corp., a division of American Radiator & Standard Sanitary Corp., according to an announcement by H. H. Dugdale, vice president in charge of sales.

Willard A. Speakman, Jr., has been elected president of Speakman Co. to succeed his father, the late Willard A. Speakman. The new president entered the company in 1923 and has been engaged in both the manufacturing and wholesale divisions. Mr. Speakman has been a director of the company for nine years and a member of the executive committee for six years.

W. A. Speakman Jr.

J. M. McKibbin, has been appointed manager of the newly created sales promotion department of Westinghouse Electric & Mfg. Co. All sales promotion on apparatus with the exception of that of the merchandising department will be placed under this new division.

George P. MacKnight, has been appointed secretary of Porcelain Enamel Institute, Chicago. Mr. MacKnight was previously associated with the Institute during the years 1931-34. He will succeed Kurt R. Groener, who has resigned.

H. H. Walters, Syracuse, N. Y., formerly connected with San-Equip, Inc., has left that organization and taken over the Rumsey Pump Co., Seneca Falls, N. Y.

Howard H. Sypher, Jr., has been appointed sales promotional and advertising manager of the R. S. Products Corp., Philadelphia, Pa. Mr. Sypher was connected formerly with Bethlehem Steel Co.

John A. Quinn, is now president and vice president of McCabe Supply Co., Inc., New York City. **M. E. McCabe** serves in the capacity of secretary and treasurer.

William F. B. Henderson, has been appointed assistant general manager of the plumbing ware division of Briggs Mfg. Co., Detroit, Mich. He will continue as director of service for the body department of the company in addition to his new duties.

Frank J. Laskey, formerly assistant general purchasing agent of Republic Steel Corp., Cleveland, Ohio, has been named general purchasing agent. Mr. Laskey came with the company at the time of the merger with Corrigan-McKinney Steel Corp., where he was director of purchases.

R. W. Davis, has been named assistant manager of the electrical department of Allis-Chalmers Mfg. Co., Milwaukee, Wis. Mr. Davis, who graduated from the University of South Dakota and later specialized in electrical engineering at Massachusetts Institute of Technology, is a member of the Assn. of Iron and Steel Engineers.

New Distributors

Sales Representatives, Appointments

L. J. Tierney Co., 1325 Statler Bldg., Boston, Mass., have been appointed New England distributor for Chicago Pump Co.

The Ridge Tool Co., Elyria, Ohio, has announced that W. L. Parcell has joined its organization as sales manager. Prior to this position, Mr. Parcell represented companies in most of the eastern seaboard as well as several southern states.

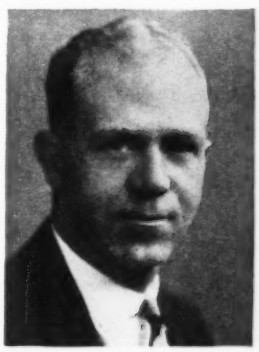
W. L. Parcell

Republic Steel Corp., has appointed Hoyle Jones as district sales manager with headquarters at Tulsa, Okla., according to an announcement by N. J. Clarke, vice president in charge of sales.

Inland Steel Co., has announced that Peter M. Lorenz has been appointed district sales manager of the St. Louis office. Frederick A. Ernst has been designated as assistant manager. Mr. Lorenz joined the company in 1910.

Never Split Seat Co., Evansville, Ind. has appointed L. C. Barnett, 1015 Kearney St., N. E., Washington, D. C., as representative for Maryland and the cities of Washington, D. C. and Rosslyn, Va.

Josam Manufacturing Co., has appointed George H. Lang as sales promotion manager in charge of the new products division. Mr. Lang, who will have his headquarters in Cleveland, formerly represented the company as manager of the Philadelphia territory.



Geo. H. Lang

Kelvinator Corp., Detroit, Mich., has announced the appointment of the following new distributors, according to J. A. Harlan, manager commercial sales: Gambil Co., Inc., Chicago; Nichols Bros., Adrian, Mich.; The Electric Supply Co., Corpus Christi, Tex.; R. W. Barnes, San Antonio, Tex.; The New York State Electric and Gas Co., Binghamton, N. Y.; F. H. Higgins, Ithaca, N. Y.; and Newport Coal Co., Newport, R. I.

H. A. Thrush & Co., Pefu, Ind. has appointed Blaine H. Moke as factory sales representative in charge of the eastern trailer display unit according to an announcement made by Lewis H. Dietz, sales manager.

Capitol Rock Wool, division of The Standard Lime and Stone Co., Baltimore, Md., has appointed James Maratta advertising and sales promotion manager. This announcement comes from F. C. Russell, who is manager of the insulation division.

AMONG THE PLUS + FACTORS IN BETHLEHEM PIPE

CLEANLINESS and uniformity of metallic structure are plus factors in Bethlehem Pipe that make it easy, economical pipe to thread. It has the stamina to stand up to fast machine threading. And regardless of how the threading is done—whether in the shop with a high-powered machine, or on the job with a portable machine or hand set—Bethlehem Pipe takes a clean, free-running thread.

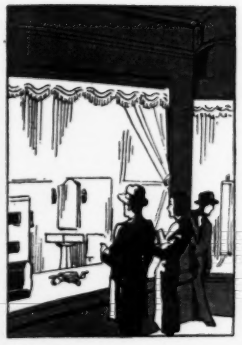
Other plus factors are freedom from scale, straightness, sound welds, good bending and flanging properties.

These qualities of Bethlehem Pipe make for lower labor costs and a better installation job wherever pipe is used.

BETHLEHEM STEEL COMPANY, *General Offices:* Bethlehem, Pa. *District Offices:* Albany, Atlanta, Baltimore, Boston, Bridgeport, Buffalo, Chicago, Cincinnati, Cleveland, Dallas, Detroit, Hartford, Honolulu, Houston, Indianapolis, Kansas City, Los Angeles, Milwaukee, New York, Philadelphia, Pittsburgh, Portland, Ore., Salt Lake City, San Antonio, San Francisco, St. Louis, St. Paul, Seattle, Syracuse, Washington, Wilkes-Barre, York. *Export Distributor:* Bethlehem Steel Export Corporation, New York.

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY



Trade

News of . . . Men . . . Associations . . . Events . . .

A. S. S. E. Convention

• *Buffalo meeting takes up action on electrical groundings, standardization, cross connections and back siphonage—E. W. Cade elected president of group for the coming year*

With approximately 85 present, the thirty-first annual meeting of the American Society of Sanitary Engineering met at the Statler Hotel in Buffalo, New York, Aug. 18-20, with the avowed intent of advancing the industry and instigating action which would be of benefit to those engaged in it. Important action taken during the course of the convention included the reports of the committee on electrical groundings, and that of committee A-40 on minimum requirements for plumbing and standardization of plumbing equipment, American Standards Assn., as well as a comprehensive discussion . of cross-connections and air gaps to prevent back-siphonage.

Officers

Officers for the coming year elected at the convention are as follows: Edwin W. Cade, president, Brooklyn, N. Y.; George R. Stolz, first vice president, Milwaukee, Wis.; Walter Potter, second vice president, Mobile, Ala.; W. H. Meadows, third vice president, Toronto, Can.; A. R. Deisseroth, fourth vice president, Middletown, N. Y.; Charles A. Hallgring, fifth vice president, Newark, N. J.; Walter Dunn, sixth vice president, Minneapolis, Minn.; Earl C. Schavey, seventh vice president, Shreveport, La.; Jere F. Doud, treasurer, Cincinnati, O.; and W. Keith McAfee, director for four year term, Newcastle, Pa. One of the first acts of President Cade after his election was the reappointment of James R. Walker, Waterbury, Conn., as secretary.

William C. Groeniger, president of the association, keynoted both the spirit and the intent of the association members when he delivered the president's report on the opening day. He declared that the membership of the society represented a cross-section of the entire plumbing industry and as such the desire of every member was for the adoption of a definite program incorporating those sanitary measures necessary for the health of individuals and communities. He added that such a program must respect the fact that safe running water makes possible the American home and that inter-allied with this factor is the safe disposal of sewage.

Mr. Groeniger also gave the following copyrighted tribute to modern plumbing: "From a rope and bucket, a pitcher spout pump, a yard hydrant, a street or alley gutter; from a tin-plated wash basin, slop jar or wooden wash-tub, and out-the-window method of disposal; from the rat, mosquito, fly and vermin infected privy vault, with its typhoid, dysentery and other infectious disease possibilities, has come the development of scientific plumbing, the elimination of health hazards and the prevention of sickness due to filth and carelessness.

"In this gradual development of a definite science the plumber offers trained, educated and responsible service for health insurance, hygienic security, and the prolongation of life and the elimination of drudgery."

Joseph J. Crotty delivered the report of committee A-40 having to do with minimum requirements and standardization of plumbing equipment. Mr. Crotty declared that the American soil pipe standard has been accepted and that other standards are soon to follow. Prefacing the actual action of the committee, Mr. Crotty stated that the American Society of Sanitary Engineering and the American Society of Mechanical Engineers were co-sponsors of the American standards committee A-40. Further, he declared that plumbing codes should be revised, but that

Officers of the American Society of Sanitary Engineering for 1936-1937. Left to right, top row: Edwin W. Cade, president, Brooklyn, N. Y.; George R. Stolz, first vice president, Milwaukee, Wis.; W. H. Meadows, third vice president, Toronto, Canada; A. R. Deisseroth, fourth vice president, Middletown, N. Y.; and Charles A. Hallgring, fifth vice president, Newark, N. J. Bottom row: Walter Dunn, sixth vice president, Minneapolis, Minn.; Earl C. Schavey, seventh vice president, Shreveport, La.; Jere F. Doud, treasurer, Cincinnati, Ohio; James R. Walker, secretary, Waterbury, Conn.; and W. Keith McAfee, board of directors, Newcastle, Pa.

Group picture taken at the banquet and dance of the American Society of Sanitary Engineering convention in Buffalo, N. Y..

revisions should represent an advancement in engineering theory and practice.

He urged the adoption of the soil pipe standard and advocated that all members of the society work for its adoption. As a sidelight upon his remarks Mr. Crotty stated that this is the first American standard for soil pipe from 2 in. to 15 in. He stated also that after investigation the United States Government has adopted the standard; consequently, in working for its adoption members and incoming officers were urged to approach the proper municipal officers in their respective territories to tell them what the standard is, for what it is meant and then urge its adoption.

The report of the committee on electrical groundings was delivered by W. Keith McAfee, chairman. Mr. McAfee sketched the development of the work carried on in connection with electrical groundings. Two years ago the society in convention at Chicago adopted a resolution which deprecated the practice on the part of electrical contractors grounding circuits on plumbing piping. Because of the abnormal electrical circuits such piping became a part of the circuit with the result that colors, tastes and odors were imparted to the water. In addition, such groundings constituted a hazard to workmen as well as a fire hazard because of the possibility of stray currents arcing to building members. Also, advanced against the practice was the argument that it caused piping deterioration through electrolysis and the destruction of joints. Since the plumber is responsible for the integrity of any plumbing system which he installs and frequently guarantees it for a period of years, there can be no valid reason why an allen trade should make it a practice in order to save wiring to use plumbing piping. A resolution adopted a few years ago urged plumbing contractors and plumbing inspectors to do all in their power to call a halt to the practice. At about the same time the National Assn. of Master Plumbers adopted a similar resolution. The American Water Works Assn., The New England Water Works Assn., The International Assn. of Electrical Inspectors, the International Assn. of Municipal Electricians and various other associations also went on record as opposed to the practice.

The resistance on the part of the American Society of Sanitary Engineering and other associations against this improper and hazardous practice which threatened to be extended resulted in the formation of the American Research Committee on Grounding. Represented on this committee were the American Society of Sanitary Engineering, National Assn. of Master Plumbers, American Water Works Assn., Bell Telephone Laboratory, American Gas Assn. and other groups.

Recommendations

Chairman McAfee recommended continuing the work with this committee. In addition, since it appeared that the electrical industry gave indication of planning the extension of improper grounding without waiting for the final report of this committee, Mr. McAfee suggested that a letter be sent to every member of the American Society of Sanitary Engineering which would call attention to the resolution passed by the society and further urge the members, whether they be master plumbers or plumbing inspectors, to halt the enlargement of such a dangerous practice. In his report Mr. McAfee pointed out how the practice is being extended so that while bonds between electricity and plumbing have so far been confined to the service entrance, it now appears that the condition is to be transferred inside the building. Should such happen to become a general practice, all plumbers would be compelled to make careful bonds in order to prevent serious shock to themselves and their workmen. As a final recommendation Mr. McAfee stated that it was his belief that the committee from the American Society of Sanitary Engineering should be admitted to membership in the American Research Committee on the same basis as the Bureau of Standards, since it is not a trade group.

Erwin Sohn, director Research Division, Standard Sanitary Mfg. Co., Louisville, Ky., delivered a paper on backsiphonage in relation to plumbing fixtures. Mr. Sohn declared that closet fixtures might be separated into five classes. The high tank, where the tank is 4 or 5 ft. above the bowl, the low tank combination in which the tank is 2 to 6 in. above the rim, the bolted-together combination, where the flush valve's seat is 1 to 1½ in. above the rim, the integral tank and bowl in which the flush valve's seat normally is below the rim and the valve operated bowl. He declared that all except the last can be protected against backsiphonage by bringing water to the tank from an orifice situated above the maximum attainable water level. He stated that ballcocks embodying this feature, while not actual siphon breakers in themselves, have the same effect.

Siphon Breakers

In discussing the subject of siphon breakers, Mr. Sohn classified them as to types. The first type discussed was

the check-valve, which he described as an automatic valve arranged to open in the direction of normal water flow and to close in case of stoppage or reverse of pressure. The air check was classified as an automatic air vent which is closed only while the line is under pressure in the normal direction of flow and open at all other times. This class was further subdivided by Mr. Sohn, who declared that to prevent back siphonage there had to be an adjustment of four variables: the cross sectional area of the water line, the cross sectional area of the air passage; the amount of lift necessary to produce siphonage; and friction resistance of the valve itself to the passage of air and water. As a third type, Mr. Sohn listed the combination check valve and air check. In discussing venturi breakers the speaker said that it is theoretically possible but not practical to make such a breaker silent.

Concluding his remarks, the speaker stated that attention should be given individual safeguards for each fixture and the industry should welcome the help of the Bureau of Standards.

"Safe Air Gaps to Prevent Back Siphonage," was the title of a paper delivered by Roy H. Zinkil, director plumbing engineering, Crane Co., Chicago. He began by declaring that the pollution of fresh water in piping systems caused by back siphonage and cross connections is a subject which has had much attention during the past few years. One means of preventing contamination of fresh water is the placement of an air gap between the end of the fresh water spout and the highest possible water level in a receptacle or fixture. Mr. Zinkil declared that air gap recommendations have been made by different organizations and that a number of city and state codes have been revised for the same purpose. Since there is a lack of data on the effectiveness of various air gaps from a safety standpoint, these revised codes and recommendations have not been consistent.

Size of Spout Opening

As a result of study carried on, Mr. Zinkil stated that the size of the opening in the end of the spout should be in many cases the deciding factor in establishing a safe air gap. In other words, a spout with a large opening requires a higher air gap than does a smaller size spout. Another fact brought out by research is that the area for air entrance around the end of spout due to the air gap must be greater than the area of the spout opening if back siphonage is to be prevented. Mr. Zinkil closed with the statement that while an air gap is a good practical means for preventing back siphonage in some installations the use of other methods, such as a vacuum breaking device to prevent the full force of a vacuum from acting upon the water in the fixture, is advocated in addition.

President Groeniger in delivering his report touched upon the subject of standardization. He declared that the American Society of Sanitary Engineering pioneered a national code as far back as 1906 and that again in 1917, 1918 and 1921 the society did further work on codes and played an active part in the formation of the subcommittee on plumbing now known as Subcommittee No. 1 of Committee A-40. On the subject of symbols he stated that the society brought up the question of standardization of symbols together with suggested drawings several years ago. He then differentiated between shop fabrication and factory fabrica-

Some of those attending the convention of the American Society of Sanitary Engineering at Buffalo. Left to right, top row: William C. Groeniger, retiring president, Columbus, Ohio; John J. Boyne, chairman local committee, Buffalo, N. Y.; William F. McDonald, assistant chairman local committee, Buffalo, N. Y.; Mrs. William E. Boyne, chairman ladies committee, Buffalo, N. Y.; Geo. W. Frank, past president, National Assn. of Master Plumbers, Buffalo, N. Y.; L. A. Cornelius, Grand Rapids, Mich.; Stephen Gilmore, St. Louis, Mo.; Joseph Crotty, Bronx, N. Y., and C. A. Hill, Port Huron, Mich. Middle row: Thomas Dugan, McKeesport, Pa.; A. R. McGonegal, Washington, D. C.; L. J. Devine, Elizabeth, N. J.; George J. Dehn, Chicago, Ill.; Thomas J. Lee, Pittsburgh, Pa.; Norman Boosey, Detroit, Mich.; Robert Dick, New York City; Thomas English, Pittsburgh, Pa., and E. L. Penfrase, New York City. Bottom row: A. M. Douglas, Dallas, Tex.; W. H. Smith, Wilmington, Del.; Richard MacLaren, Brooklyn, N. Y.; Edwin Field, Cleveland, Ohio; O. J. Cullington, Lawrence, Mass.; Joseph Hirshstein, Cleveland, Ohio; Mrs. J. R. Walker, Waterbury, Conn.; H. R. Doughty, New York City; and M. P. McDonough, Denver, Col.

tion. He declared that shop fabrication may be considered fabrication carried on in plumbing shops, while factory fabrication must be considered assembly and construction at a factory. In shop fabrication the article, apparatus, device, pipe, fitting or construction is assembled and the joints made either in a plumbing shop or on the premises of the building under construction. In factory fabrication both the assembly and the joints are made by the manufacturer at his factory. In viewing the subject of standardization, the initial and ultimate consideration should be the benefit of the consumer.

L. A. Cornelius, a director of the society, prepared and distributed a booklet, "They Die from Neglect," a compilation of case histories on water borne disease. Mr. Cornelius in introducing the book declared that it contained statements of many medical authorities on the subject. Thus from inference the relationship between plumbing and health and the necessity for plumbing inspection was shown. The subjects in this booklet include the following: "Water Borne Diseases"; "Pollution of Water by Sewage"; "Appearance of Water Borne Diseases in the United States"; "The Relationship of Plumbing to Public Health"; "Legal Machinery for Prevention of Water Borne Disease"; "The Need for Inspection to Assure Safe Plumbing"; "Current Data from State Boards of Health"; and "Conclusions." Under this last heading of "Conclusions," the booklet declares the causes of water borne diseases are known and that the medical profession is agreed as to the essential preventive measures. Chief among these measures is a non-contaminated water supply and an adequate system of sewage disposal. To secure both, plumbing must be installed by those qualified for fitness and licensed to perform such service. Public knowledge can, by force of public opinion, bring about a correction of conditions.

Plumbers

Following a similar line of thought was a paper given by Stephen H. Gilmore, a past president of the society and manager of the St. Louis branch of Kohler Co. His paper entitled, "The Importance of the Plumber," declared that the plumber offers something that can be secured from no one else. That there is a need for further public education along this line was brought out by the fact contained in figures of the real estate survey of 1934. In 64 cities studied, 10 per cent of the homes were without running water; 20 per cent had no indoor toilet; and 25 per cent were without tub or shower. In

Pictures taken at the American Society of Sanitary Engineering convention. Left to right, top row: E. R. LaFond, New Britain, Conn.; H. L. Schaller, Miami, Fla.; and E. C. Carlson, Youngstown, Ohio. Bottom row: Leo Haggerty, Aurora, Ill.; Bart D'Arcangelo, Buffalo, N. Y.; and J. D. Ryan, Buffalo, N. Y.

discussing handymen, Mr. Gilmore declared that those who sacrifice everything else to price place their own health at stake.

Mr. Gilmore declared that manufacturers realize that master plumbers constitute the one and only group which can give proper installations and thus do full justice to the manufacturer's products. Not only is the master plumber the only qualified installer, but also is much needed as an adviser to the architect, general contractor and owner.

The paper sketched what is meant by modern plumbing, the following four factors being presented: quantity production of interchangeable fixtures and parts; scientific design of fixtures and choice of materials to provide the greatest possible sanitary safeguards; skilled and scientific installations; and legal requirements as to materials, qualifications and licensing of installers and inspection of installations as prescribed in well drawn plumbing codes.

Mr. Gilmore added that the future advancement of plumbing is dependent upon the further education of the public as to the services rendered by plumbers and if given a chance the plumber will bring about further and greater improvements in public health.

Another question discussed was sound in relation to plumbing. Robert Dick of the Lead Industries Assn. delivered a paper on the subject which was based upon findings carried on in France and England.

Dr. Anson Hayes, director, research division American Rolling Mill Co., was introduced by Mr. Dechant and talked on formed metal plumbing fixtures, which he declared were not a new development, since single sheet drawing of fixtures and experiments with multipiece welded fixtures were carried on some years ago. Several factors are responsible for the present development, the speaker stated.

Pipe

C. A. Hill, Mueller Brass Co., delivered a paper on pipe. In the construction of pipe as well as any other manufacturing operation, two factors must be considered in the choice of any material—will that material serve the purpose and is it economical? Mr. Hill sketched the development of different materials used for pipe from antiquity to those used today.

In touching upon the factors which controlled the use of different materials in pipe, Mr. Hill pointed to the capacity of water to hold air in solution and to chemical reaction caused by heat.

The speaker also devoted some attention to the subject of solder. The most widely used solder, he declared, is composed of 50 per cent lead and 50 per cent tin, which can be used up to a temperature of 250 deg. Fahr. Other solders in use include the tin antimony combination, which may be used up to 300 deg. Fahr. Also, the United States Navy uses a solder with a melting point of 700 deg. Fahr., which is used but little commercially. Mr. Hill concluded his paper with several statements showing the use today of copper and brass pipe and tubing.

Resolutions

In a report of the resolutions committee five resolutions were presented and adopted. These were in addition to an amendment which was proposed and held in abeyance until action could be taken on the part of the research committee. One of these resolutions had to do with cooperation between the American Society of Sanitary Engineering and the National Assn. of Master Plumbers. It resolved that the incoming president should be instructed to write President Werner of the National Assn. of Master Plumbers that the society was in hearty accord with cooperation and further that the incoming president appoint a committee to meet with a like committee of the National Assn. of Master Plumbers to consider the proper steps for an agreement between the two groups.

N. A. M. P. Cooperation

This resolution was in part prompted by an address given by George W. Frank, past president of the National Assn. of Master Plumbers. In his short address Mr. Frank brought the greetings of President Werner and other officers of the National Assn. of Master Plumbers. He advocated the inter-

"Gentlemen—
This coil is cradled
in the casing.. Revolutionary"

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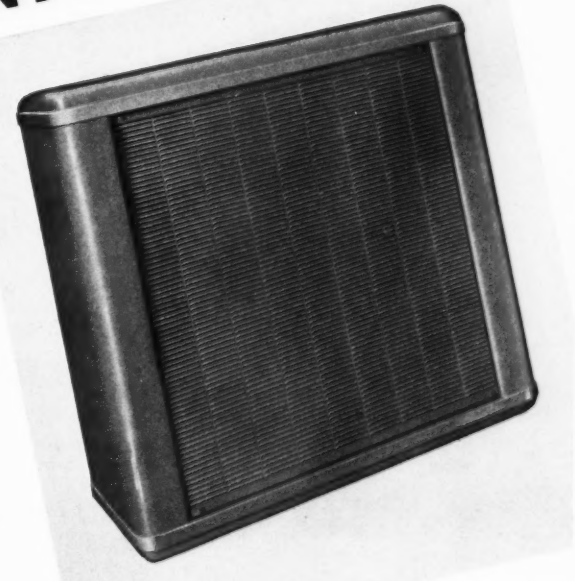
Rigidity goes
-and with it
costly stress
and strain.

New TRANE cradle coil UNIT HEATERS



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I WAS JUST THINKING THAT THE GUTTERS AND FLASHING WOULD NEVER RUST — THEY'RE COPPER
IT WOULD BE FUN HAVING A PLAYROOM IN THIS BASEMENT — IT'S SO CHEERFUL AND CONVENIENT.
AND THE PIPING IS ALL REVERE COPPER TUBE. THE HOT WATER TANK IS COPPER, TOO!
THIS ROOM WOULD MAKE A SWEET NURSERY — WHEN WE NEED ONE
OUR CHILDREN MAY HAVE TO MAKE SOME REPAIRS IN THIS HOUSE, BUT WE WON'T
WILL YOU STOP POKING YOUR NOSE INTO PIPES AND LOOK HERE — THERE'S EVEN A SPRING ON THE PLACE
THIS DOWNSPOUT WILL NEVER SPRING A LEAK. THERE'S THE REVERE TRADE-MARK
LOOK beneath the surface when you buy or build . . . look for the vulnerable spots where rustable metals can pave the way for swift depreciation and early repair. Since 1801, Revere copper has been protecting American buildings. Your architect will specify Revere products . . . your contractor will be glad to use them. Both know that Revere quality means lasting satisfaction. Revere products for the home include: Copper Water Tube with Streamline soldered Fittings for water, oil and heating lines. Brass pipe. Sheet and strip copper and Leadtex (lead-coated copper) for gutters, downspouts, flashings and other sheet metal work. Copper and Herculoy for hot-water tanks and range boilers. Brass and bronze for hardware and lighting fixtures. Copper and brass giftwares.
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Revere Loosens Your Customers' Purse-Strings

* This advertisement, published in the September 28 issue of "TIME," will be read by many people in your town. It is a part of a Revere campaign to make your customers realize that better plumbing and heating installations mean better living; that it is better economy to use Revere Copper Water Tube for all piping purposes. Revere strives sincerely not only to help you with better materials, but with better merchandising. Your Revere distributor will supply you with Revere Copper Water Tube and Streamline soldered Fittings; also Revere Brass Pipe.

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EXECUTIVE OFFICES: 230 PARK AVENUE, NEW YORK CITY

change of thoughts, ideas and experience betwen the two groups. He then introduced the research program of the National Assn. of Master Plumbers and stated that it was his hope and that of the group he represented that there should be some means of maintaining active hearty cooperation between the research committee of the National Assn. of Master Plumbers and the research committee of the American Society of Sanitary Engineering.

The various committees appointed to serve during the progress of the convention were: resolutions—J. J. Crotty, chairman; W. Keith McAfee, T. M. Dugan and W. H. Smith; auditing—W. H. Meadows, chairman; Joe Hirshstein and E. W. Cade; press—J. R. Walker, chairman; J. J. Boyne and Robert Dick; convention city—Thomas G. Lee, chairman; J. J. Boyne, George Dehn, J. R. Walker and George Stolz; nominating committee—L. J. Devine, chairman; J. R. Bean and Richard MacLarin. After considering the various cities as a site for the convention in 1937, Washington, D. C. was chosen.

Committee Reports

The reports of various committees outside of those already mentioned included the report of committee to amend the society's constitution given by L. A. Cornelius, chairman. The report was continued in order to give the committee more time. Joseph J. Crotty incorporated the report of the representative of the American Standards Assn. with his report on Committee A-40. James R. Walker delivered the report of the publications committee, in which he stated that the year book for 1933-34-35 will be published and distributed on or about January 1, 1937. Mr. Walker also delivered the report of the librarian. E. L. Penfrase delivered the report of the committee on symbols. In the absence of Thomas J. Claffy, chairman of the research committee, that report was delivered by W. H. Smith. One of the findings of this committee was that traps and vents are absolutely necessary for all waste lines. Although A. R. McGonegal was compelled to give up active participation on the various committees of which he was a member, he reported for the committees on safety code for mechanical refrigeration, B-9, colored plumbing fixtures, hospital plumbing fixtures and screw threads for hose couplings, ASA-B-33.1-1935. The report of the committee on industrial sanitation, Z-4, was given by Thomas Dugan. The memorial committee in delivering its report gave a suitable tribute to the two members of the society who had died during the year, Thomas M. Landers, Jr., and George A. Lutz.

Board of Directors

Secretary Walker gave the report of the board of directors in which he stated the intention of the society was to be chartered in the state of Ohio. Another recommendation of the board was that the American Society of Sanitary Engineering, if possible, assume the expense of the committee on electrical grounding. W. H. Meadows, chairman of the auditing committee, gave the report of that group, which was accepted.

The opening ceremonies of the convention found several notables delivering addresses of welcome. Because of the unavoidable absence of George J. Zimmerman, mayor of Buffalo, the convention was welcomed to the city by Robert J. Summers, judge of the city court. J. J. Crotty, past president, gave the response to Mr. Summers and J. J. Boyne, chairman of the local committee, introduced Mr. Summers and William C. Groeniger, president of the society. Also introduced were the past presidents in attendance at the meeting. These included J. J. Crotty, Thomas Dugan, A. R. McGonegal, James Walker and Stephen Gilmore. The secretary read several communications which were received from members unable to be present. The treasurer's report was given by Jere F. Doud.

At this time, upon the motion of Mr. Crotty, L. A. Cornelius, a director of the society, was unanimously voted an honorary life membership in the American Society of Sanitary Engineering by the members.

Some of the ladies who attended the American Society of Sanitary Engineering convention. Top row, left to right: Mrs. T. J. Lee, Pittsburgh, Pa.; Miss Alice Donnelly, New Bedford, Mass.; Mrs. L. J. Devine, Elizabeth, N. J.; and Mrs. W. H. Smith, Wilmington, Del. Middle row: Mrs. William C. Groeniger and daughter, Hermanna, Columbus, Ohio; Miss Mary E. Donnelly, New Bedford, Mass.; and Mrs. T. H. O'Neill, Auburn, N. Y. Bottom row: Mrs. Irene Sutton, Mrs. John M. Collins and Mrs. A. Hoesel, all of Buffalo, N. Y.; and Mrs. E. G. Parker, New Bedford, Mass.

Water Closets

B. O. Tilden, a member of the research committee, was scheduled to deliver a paper, the fifth in a series, "The Evolution of the Water Closet," but because of illness in the family, this paper was read by W. Keith McAfee. The introductory part of this paper was concerned mainly with the forms of prevention of disease carried on in antiquity. Also mentioned were the folkways and mores of different races. The paper then traced the growth of science and sanitation up to the time of the fall of the Roman Empire. Medical science as developed by the Greeks was mentioned, as was the engineering skill of the Romans themselves. A section of the paper was devoted to the Dark Ages, which another speaker on the program entitled "One Thousand Years Without a Bath." The trend towards modern sanitation and the development of science was traced from those years up to the present time. In conclusion the paper stated that sewage disposal facilities are second only to water works as a health measure.

Soil Pipe

A telegram was received from the American Society of Mechanical Engineers urging the society's adoption of the new standard for soil pipe and complimenting the society for the work it had done. Dr. Francis E. Fronczak, health commissioner, city of Buffalo, who was scheduled to speak, sent his regrets at being unable to attend and Mr. Bachellor, chief of the Bureau of Vital Statistics in Dr. Fronczak's department, gave a short talk on the subject. He declared that modern sanitary engineering can be traced back only about 150 years, but that since that beginning there has been a constant trend towards improved health and increased social benefits. The earliest recognized danger to public health was a polluted water supply. Following this, came the disposal of waste and sewage. Mr. Bachellor stated that ancient sewers were used only for drainage, and not for the disposal of waste. Plumbing regulations, he declared, must be enforced from a public health standpoint. The principal relationship between plumbing and health is to be found in this fact and in the constant protection against contamination of a potable water supply.

Water Supply

Allen D. Drake, director of water, Buffalo, N. Y., described the development of the water supply system in that city. The building of trunk mains, tunnels, filters and tanks in the city was shown.

John Coefield, president, United As-

sociation of Journeyman Plumbers and Steamfitters of the United States and Canada, was prevented from delivering his scheduled address on cooperation, but in his place was Ed. Leonard, who advocated a national sanitary code to be adopted by the Federal Government. He declared that except for slight variations the health requirements all over the country could well be served by one code.

A telegram addressed to Mr. L. A. Cornelius from the Brass Institute on standardization of brass pipe was, upon the motion of Mr. Cornelius, tabled for the incoming officers' attention. The one amendment to an existing resolution was devoted to the air gap clearance which had been proposed. Upon the motion of the resolutions committee, this was changed tentatively so that the air gap should be at least two times the spout size, or a clearance in which the distance was equal to two times the diameter of the orifice.

A number of interesting and entertaining social events were arranged for convention delegates. On Wednesday afternoon the ladies were guests at a theater party and that evening the entire group was taken on a tour of Buffalo and to Niagara Falls.

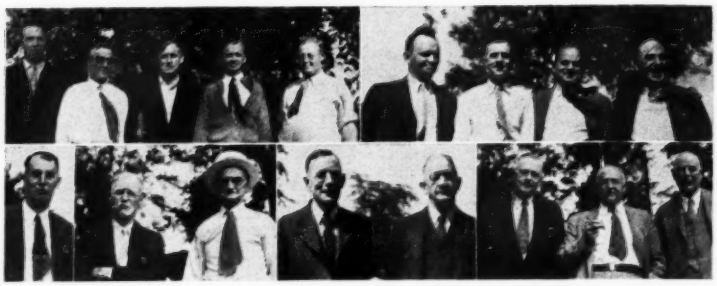
The final event of the convention was a banquet and dance which took the form of a family party held at the hotel. William C. Groeniger, retiring president, acted as toastmaster at this function. In the course of the dinner short addresses and introductions were made from various parts of the floor. Dancing followed. The convention was scheduled to last until August 21, but conditions were such that adjournment was reached a day previous to that date.

Oakland Outing

Members of the Oakland association and their families staged a very enjoyable outing, August 2, at the country place of Robert Feary. Over 100 enjoyed the barbeque dinner that was served as well as the various games which were provided as amusement. In the evening, group singing was accompanied by Mrs. Crane, wife of the secretary of the association, who played the piano. The arrangements committee for the affair consisted of N. J. Previati, chairman; Robert J. Duncan, Jr., president, and Frank A. Gottstein.

New Jersey Office

The office of the New Jersey State Assn. of Master Plumbers has been moved from 45 Edison Place, Newark, N. J., to 240 West Front St., Plainfield, N. J. An open house and a reception for local presidents, past state presidents, secretaries and members was held at the new office Aug. 19. A regular meeting of the state executive board was held at the same time when plans were made for an extensive membership drive.



Pictures taken at the basket picnic of the Syracuse, N. Y. association, July 30. Left to right, top row: Art Cavanaugh, president; Frank Rinehart, vice president; Charles Sunlay, treasurer; Howard Coon, secretary; Willard Spicer, past president; H. D. Carey, Standard Sanitary Mfg. Co.; F. W. Sheppard; J. J. McCormick, Midstate Supply Co., Inc.; and John T. Connelly, Kennedy Valve Mfg. Co. Bottom row: H. A. Caldwell; Walter Coling; George L. Bauer; William F. Gooley, William B. Young; F. C. Waters, W. A. Case & Son; R. A. Baxter and J. D. Miller, both of W. G. Shafer Co., Inc.

Chicago Meets

The regular meetings of the Chicago Plumbing Contractors' Assn. which were dispensed with during the summer months were resumed September 1 with a dinner at the Congress Hotel. Pres. Thomas F. Hanley, Jr., who was recently appointed a national director, made a report to the meeting concerning the progress of association affairs. Over 200 were in attendance including 25 new members whose applications were obtained since the June meeting. Instead of the first Friday of each month, the regular meetings will be held the second Tuesday of the month at 6 o'clock and, as an experiment to stimulate interest and increase attendance, the meetings will be held in connection with a dinner.

Syracuse Picnic

The annual basket picnic of the Syracuse association was held July 30, at Enna Jettick Park near Auburn, N. Y. Besides association members and their families, representatives of the manufacturers, wholesalers, various city departments and the utilities attended also. Everyone brought a basket lunch, while the association furnished additional refreshments and tickets to the different amusements in the park.

Many different games were played during the course of the day. The committee in charge was composed of the following men: Charles Sunlay, chairman; Art Cavanaugh; Frank Rinehart; George Dintruff; Willard Spicer; and Howard Coon.

Cooperation

- *Philadelphia association gets figures on result of sales cooperation with utility companies*

The regular meeting of the Philadelphia association was held August 6, at which time a report was given by William C. Hirst, chairman of the gas committee, which showed the results of cooperative sales efforts carried on between contractor-dealers and utilities.

In the period from September 1935 to August 1936, $435,000 of merchandise such as stoves, water heaters and the like was sold by contractor-dealers. The commissions paid to contractor-dealers on such sales amounted to $87,000.

The secretary of the association was instructed to write E. L. Penfrase in an effort to secure the motion pictures on cross connections which were prepared by the Minnesota association. If possible these pictures will be shown at the September meeting. An effort was made also to secure the motion picture, "Whole Sailing Along." A vote was taken instructing the secretary to notify the members when and where this picture could be seen.

A letter was read at the meeting from President Werner devoted to the subject of distribution. Pres. John Lamond announced that Philadelphia had been honored again by having Robbert Pflug-Felder reappointed a national director. Following this, a discussion was held upon the city code and action was taken to appoint a committee.

Harry Stilwell, Sr., reported for the picnic committee. John Naegle followed with a talk on membership, reporting that two additional men had been added. Philip Hering, Jr., declared that progress had been made on the subject of apprenticeship but suggested that a committee be appointed to study the subject more completely.

National Affairs

- *President Werner announces territory assigned to board of directors—Membership of committees given*

Setting a new record for speed, President Werner has announced the territory to which the various members of the board of directors have been assigned and over which they will have jurisdiction. The membership of the board and the territory for each are as follows:

Board Members

L. J. Kruse, vice president, California, Nevada, Utah and Arizona; George L. Bird, secretary, New Jersey, District of Columbia, Delaware and Maryland; H. O. Green, treasurer, Oklahoma, Kansas and Colorado; George W. Frank, New York and Connecticut; P. W. Donoghue, Maine, Vermont, New Hampshire, Massachusetts and Rhode Island; Walter E. Eynon, Ohio, Michigan, West Virginia and Kentucky; Thomas F. Hanley, Jr., Illinois, Wisconsin and Indiana; Howard L. Hopkins, North Carolina, South Carolina and Virginia; Clayton Lee, New Mexico, Louisiana and Texas; D. A. Mayfield, Florida, Alabama, Georgia and Mississippi; Edward Monteath, Missouri, Arkansas, Tennessee and Iowa; R. H. Pflug-Felder, Pennsylvania; H. M. Porter, North Dakota, South Dakota, Minnesota and Nebraska; and Walter J. Widmer, Washington, Oregon, Montana, Wyoming and Idaho.

Also announced by President Werner was the membership of the various standing committees. The apprenticeship committee has Edmund P. Ingram as chairman and includes J. W. Lundon of Dubuque, Iowa, J. Harry McCarthy of Washington, D. C., Charles M. Swinnerton of Los Angeles, Cal., and Felix Wahrmund of San Antonio, Tex. Richard J. Welch is chairman of the scholarship committee which has the following members: George H. Drake, Buffalo, N. Y.; John P. McCoy, Fond du Lac, Wis.; G. J. Palmer, Ames, Iowa; and George H. Werner, Orange, N. J.

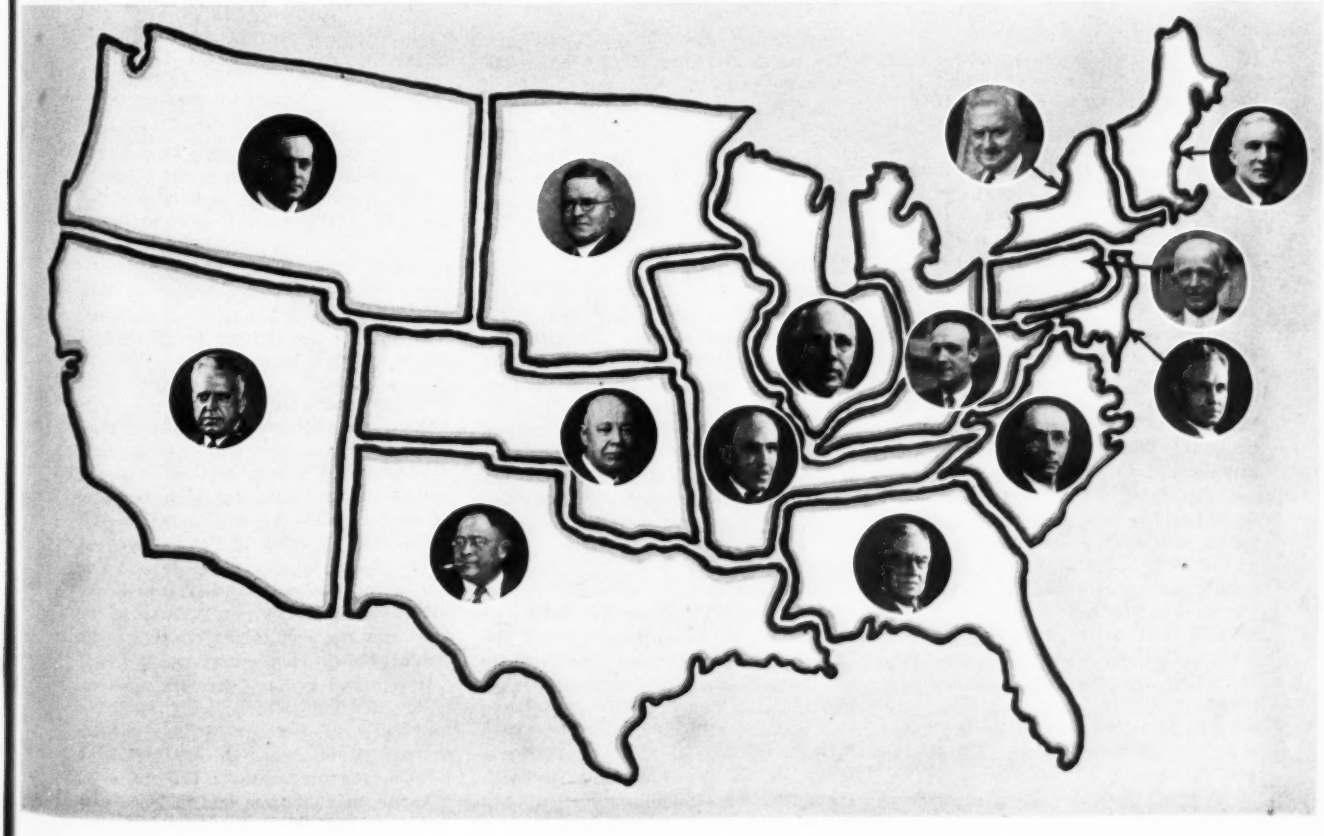
The following men will serve on the conference committee under the chairmanship of P. W. Donoghue: George H. Drake, Buffalo, N. Y.; Walter Klie, Cleveland, Ohio; L. J. Kruse, Oakland, Cal.; and Herbert F. Weldin, Wilmington, Del. The sanitary committee is made up of A. R. McGonegal, chairman, Philip S. Bailey, North Scituate, Mass.; E. B. Clayton, Denver, Col.; Francis C. Dorsey, Baltimore, Md.; and Kenneth Murhard, Portland, Ore. Jere L. Murphy is chairman of the standardization committee with the following members serving: Joseph G. Hayes, Indianapolis, Ind.; Robert E. Murphy, Chicago, Ill.; R. W. Timmons, Richmond, Cal.; and George O. Toepfer, Milwaukee, Wis. John J. Calnan will head the Plumbing and Heating Industries Bureau.

Names Committees

Following the recent meeting of the board of directors of the Plumbing and Heating Club of San Francisco, when Ralph P. Olsen was chosen president, Mr. Olsen has selected the following committees: membership and attendance—H. S. Haley, chairman; B. F. Blair, Herman Lawson, E. D. Sullivan, Stuart Greenberg and J. W. Forsythe; golf committee—W. A. Taylor, chairman; F. F. Elliott and Jack Camp.

President Olsen has announced that at the end of his term of office he will donate a trophy to the golfer who, during this period, has the most low net scores. Plans for September include a week-end outing.

This map shows the sections into which the country has been divided and the officer or member of the board of directors of the national association to whom the territories have been assigned



President's Report

• *Werner adopts plan of monthly reports to inform industry of national association's activities—Work in progress on booklets emphasizing relationship between plumbing and good health*

It gives me pleasure to report the activities of the national association during the period July 1 to August 24 to the plumbing industry. I believe that both members and non-members should inform themselves on what the national association is doing, so that members will reaffirm their loyalty to our organization, and so that non-members may be induced to join. It is for the purpose of informing the industry on what the national association is doing that I have inaugurated this plan of monthly, and detailed, reports.

New Booklets

For several months the staff of the national association, with the cooperation of an advertising agency, has been working on the development of six booklets for use by master plumbers to develop business through emphasizing the close relationship between good plumbing and good health.

With the general theme of "Inspect and Correct Your Plumbing Twice a Year," these booklets dramatize the dangers of improperly installed plumbing and point out to home owners that they should be sure they are safe by calling in a qualified master plumber to inspect and correct their plumbing systems. These attractive booklets will be printed in three colors, and bear such captions as "The Accident That Almost Stopped a World's Fair," "Dirty Work at the Crossroads," "Baby Takes a Drink" and so on. The stories are simple and are based on scientific facts. An outstanding artist has designed the books, and they will be in every way creditable to the national association and to the master plumbers who use them. The books and the copy have received my approval and are now in the hands of the chairman of the sanitary committee for checking their scientific accuracy.

A departure will be made from the usual custom in the distribution of these booklets. While they will be available to both members and non-members, paid-up members of the association can purchase the booklets, imprinted with their names, at a much lower price than can non-members. This is in line with the general policy that members should be shown preference over non-members while, at the same time, all master plumbers should have available to them the benefits of N. A. M. P. work.

These booklets will be ready for distribution, it is hoped, before the end of September. An initial run of 25,000 of each of the six booklets has been arranged for, and provisions have been made for re-printing them in the event that the demand exceeds present expectations.

Those present at the Buffalo convention will recall the resolution introduced by a constituent state association making it mandatory, if financial condition permitted, to issue the proceedings of the convention prior to December 31 of the year in which the convention is held. It gives me pleasure to report to the industry that over half of the edited copy of the proceedings of the Buffalo convention is now in the hands of the printer and that paid-up members will receive the proceedings within the time limit specified in Resolution No. 9.

I believe it should be pointed out that only members paid up in the national association at the time at which the proceedings are published, receive their copies. A reasonable extra supply of the proceedings will be available for new members who join the association subsequent to December 31, 1936, and prior to June 1, 1937.

Pursuant to the action of the fifty-fourth annual convention all of the resolutions, which could be carried out without special consideration by the Board of Directors, have been taken care of.

Resolution No. 2

Resolution No. 2, which dealt with the barring of apprentices on PWA work, has been called to the attention of the Honorable Harold L. Ickes, both formally by letter and by personal visitation. The assistance of the Federal Committee on Apprentice Training has been enlisted, and the situation looks favorable for the elimination of the conditions against which complaint was made.

Resolution No. 6

Resolution No. 6 called for formal notice to various interested bodies on the N. A. M. P. attitude toward the grounding of electrical systems on plumbing, heating and gas pipes. These formal notifications have been sent and the matter will be closely followed through the official N. A. M. P. representative on the American Research Committee on Grounding.

Resolutions Nos. 11 and 14 had to do with the materials and methods used by the Resettlement Administration in its installation of plumbing systems at Hightstown, New Jersey, and elsewhere. During President Frank's administration, numerous representations were made to the Resettlement Administration on this subject, without avail. Pursuant to the two before-mentioned resolutions, this subject has again been opened with the Resettlement Administration, both by correspondence and in person; but no particular relief is anticipated, in view of the fact that the Resettlement Administration operates as practically an autonomous body. In the event that relief from the conditions complained about is not obtained before the convening of the next session of Congress, a vigorous campaign will be waged among the members of Congress to acquaint them with what is going on, and urging them to take remedial action.

Resolution No. 19

Resolution No. 19 had to do with the Federal Housing Administration. Representations have been made to the FHA leading to the adoption of the N. A. M. P. plumbing code as a mandatory minimum standard for plumbing installations guaranteed under FHA mortgages.

Nothing has been done on the resolutions relating to the monthly Bulletin published by the N. A. M. P., as this is a matter which can only be considered by the board of directors.

In view of the acceptance by certain of the manufacturing interests of the invitation extended to them to meet with representatives of this association to confer on the subject of establishing a joint planning board, as suggested by the fifty-fourth annual convention, a meeting has been scheduled for the middle of September. The conference committee will be represented at this meeting and a full report of what occurs will be transmitted to the industry, if possible, in September.

Journeymen Conference

It gives me pleasure to announce that the United Association of Journeymen Plumbers and Steam Fitters have accepted my invitation for a conference, as suggested by the fifty-fourth annual convention. In view of the subjects to be discussed at this conference, I am asking the chairman of the apprenticeship committee, Mr. E. P. Ingram, to join with the conference committee in conducting these negotiations.

It is hoped to have the first meeting of the newly-appointed board of directors early in October. It is believed that this meeting can be more resultful if adequate preparations are made in advance, so that time and expense can be conserved. The board of directors

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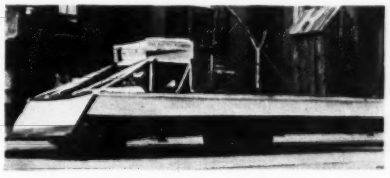
of the N. A. M. P., when they meet, will be confronted with problems laid in their hands by the fifty-fourth annual convention, such as research, the monthly Bulletin, a reorganization of the N. A. M. P. administrative procedure, and other matters. It is felt that the meeting of the conference committee with the manufacturers and with organized labor will furnish much material for the consideration of the board.

I should like to take this opportunity to thank the constituent state and local associations for their promptness in sending in per capita taxes during the months of July and August. Ordinarily, July and August are months of relatively low collections. During the month of July $3,042.50 was collected in dues. As of August 24, the collection of per capita tax for the month of August has been $2,134.00.

Added emphasis will be placed this year on a revival of interest in local associations which, for one reason or other, have either disbanded or become inactive. A definite campaign has already been planned and will be inaugurated shortly under the direction of National Secretary George L. Bird, with the cooperation of the directors and officers of state and local associations, to bring these defunct and dormant associations back into active affiliation with the N. A. M. P. I bespeak the cooperation of all members in the furtherance of this plan.

Your national association is in a sound financial position. No expenditures are contemplated which will jeopardize that position. It will be my aim to make definite progress in the accomplishment of the objectives defined by the fifty-fourth annual convention. In addition to that, I should like to increase the membership to a marked degree, on the basis of the service we have and shall continue to render to the membership. I should like to leave the national association with even greater financial resources than those turned over to me by my admirable predecessor. I feel confident that I can count on the active help of everyone in the ranks of the master plumbers in these endeavors.



This is the float entered by the Albany association in the centennial parade in that city recently

Albany Float

"The Master Plumbers Have Changed All This," was the message carried on the float entered by the Albany Master Plumbers Assn. in the parade which was a feature of the centennial celebration held in that city recently. The centennial was held in celebration of the Dongan Charter issued to Albany 250 years ago and emphasized the progress made since its adoption. The float entered by the association received much favorable comment. One feature of it was the realistic touch of having water drip from the bucket of the old well.

North Hudson Outing

The annual outing of the North Hudson (N. J.) Master Plumbers Assn., Inc., was held July 11, at Forest Hills Park, Butler, N. J. The affair was a basket picnic, but the association furnished additional refreshments. E. W. Berger & Bro., supply company of Weehawken, N. J., donated the use of one of their trucks to carry supplies. Over 100 attended the outing and spent the day in swimming and various games. The committee in charge of the affair was composed of William Jacob, chairman, Fred Baker, John Blaum, Clyde C. Cole, Cal Westervelt and Anthony Orecchio.

Omaha Picnic

Through the cooperative efforts of the Omaha Master Plumbers Assn. and the Omaha jobbers, a picnic was given at Limona Beach on the Platte River, July 30. About 300 contractor-dealers, jobbers and salesmen with their families attended. William Schollman, a member of the association, was chairman of the committee in charge of the event. Other members of the committee included: James Bailey, Andrew Anderson, John Anderson, Joseph O'Brien, R. Steel, George Dourghty, Grant Rydberg, A. Stark, Watson Cunningham, Vence Simmond and L. L. Carr.

Besides a ball game, several races and contests and swimming, group singing took place after supper led by Richard Krimlofski and his son who accompanied on their accordions. In the evening dancing was the final event on the program.

Plumbing Trades Golf

The fourth golf tournament of the Chicago Plumbing Trades Golf Assn. was staged at the Bunker Hill Golf Club, August 13. Seventy-nine members were in attendance and of this number seventy-one participated in the tournament.

In class A, the low net was turned in by M. Schulhof with a 90-20-70, which reverting to par, gave him 72 for the eighteen holes. He was awarded first prize. The second prize in this class was won by Ralph Reedy with an 85-12-73 and the third prize was won by Howard Nilson with an 88-15-73. In class B, Ed. Hawley with a 93-21-72 won first prize. G. F. Holm and A. Nilson were tied for third prize.

Secretary Munn read a challenge from Pres. Frank O. Glas of the Milwaukee Plumbing and Heating Club for a joint tournament at Milwaukee.

Scores turned in were as follows:

Ted Ahrenberg	138	40	98
John Blair	119	34	85
P. J. Brown	104	23	81
Harold Burr	86	8	78
R. Carey	107	23	84
E. Carroll	96	19	77
Dr. Cigrand	112	20	92
H. Crum	101	21	80
Howard Doyle	90	8	82
Chas. A. Dreier	104	27	77
L. P. Eaton	122	30	92
E. Egner	100	14	86
Joe Erickson	99	22	77
F. Fabri	103	19	84
Chas. Farley	104	17	87

Group picture taken at the picnic given by the Omaha association at Limona Beach, July 30

The pictures on this and the facing page show the large turnout of members and their

Jas. Fettes	101	24	77
Axel Flodberg	107	30	77
D. Ganey	122	28	94
L. L. Gloeser	88	10	78
Max Greenberg	117	22	95
John Guldan	93	18	75
F. K. Hackett	101	19	82
Thos. Hanley	108	24	84
John Howatt	88	17	71
Ed. Hawley	93	21	72
Thos. Heavy	97	21	76
Chas. Herbert	95	21	74
G. F. Holm	98	30	68
C. Jones	105	21	84
Louis Katz	110	29	81
Jack Kiley	86	10	76
Ralph Lindblad	105	19	86
John Madden	108	21	87
Wm. Merryman	111	27	84
H. W. Mollison	87	10	77
Ed. Mortimer	94	21	73
P. M. Munn	110	27	83
A. Nielson	102	30	72
Howard Nielson	88	15	73
Joe Paus	126	25	101
J. F. Reed	103	20	83
R. Reedy	85	12	73
H. P. Reger	104	27	77
E. W. Rietz	99	18	81
Fred Rix	127	35	92
Fred Ruhnke	93	18	75
H. W. Ryan	94	12	82
H. Scheel	107	31	76
M. Schulhof	90	20	70
Ted Seabrooke	99	17	82
D. Shoup	92	10	82
Phil Sieben	107	24	83
Buddie Sievert	93	14	79
Wm. Sievert	98	20	78
H. Snyder	105	17	88
Wm. J. Spillane	90	14	76
Jess Stanfield	89	16	73
John Sterbenz	106	27	79
H. Swade	124	27	97
L. A. Turner	107	28	79
Wm. Ward	120	30	90
C. Watterton	83	10	73
Porter West	91	14	77
M. Westerberg	89	15	74
W. J. Woolley	104	16	88

Quad-City Outing

Approximately 800 members and their families attended the eighth annual family picnic of the Quad-City Plumbing and Heating Industries. This organization includes representations from Rock Island, Ill., Moline, Ill. and Davenport, Iowa. The picnic was held at Credit Island, Davenport, August 6.

A program of entertainment including baseball, golf, cards, games and contests had been arranged for the day. The picnic committee was under the chairmanship of Henry F. Lamp and L. R. Sidney acted as vice chairman.

Western Trade Golf

The August meet of the Western Trade Golf Assn. was held August 20 at the Bob-O'-Link Golf Club. The Bob-O'-Link Club is one of the finest in the Middle West and the fairways were in such excellent shape that there was little or no roll. Accordingly, the best net score was 74. The prize winners were as follows: Class A and B—James Milliken—83-9-74; Tom Brown—86-11-75; and E. O'Connor—87-12-75; Class C—F. H. Gaylord—94-20-74; Jack Walsh—100-21-79; and Herbert B. Thomas—98-18-80; Class D—M. E. Allen—99-22-77; E. P. Rich—100-22-78; and L. W. Washington—100-29-81.

Annual Outing

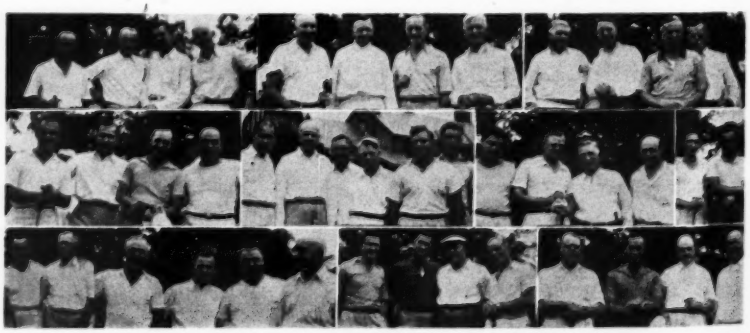
The twelfth annual outing of the Master Plumbers Assn. of Newton and vicinity was held at the Stow Country Club, July 29, with approximately 100 present. Besides master plumbers and their families, representatives of wholesalers, manufacturers, utilities and inspectors were in attendance. Following a turkey dinner, a short program was held at which time the following people spoke: Chas. D. Kieser; Michael O'Connell; J. J. Downey; R. D. A. Thompson; Jerry Roulstone; George Hewitt; Thomas O'Brien; Richard T. Leahy; Mrs. Fred E. Perkins; G. Wilbur Thompson; and W. C. Flavin.

A program of entertainment for both children and adults had been arranged. Winners in the ladies' division were: Mrs. George Carey; Mrs. Fred E. Perkins; Mrs. Paul Urpin; Mrs. J. J. Downey; and Mrs. Fred Warren.

The committee in charge of arrangements included Chas. D. Kieser, chairman, Richard T. Leahy, L. W. Stevens, Leonard Hickman, Fred E. Perkins and Michael O'Connell.

Elizabeth Outing

The Master Plumbers Assn. of Elizabeth and vicinity were guests for the third successive year of the Elizabeth Plumbing and Heating Supply Co. at an



Pictures taken at the Western Trade Golf Assn. meet at Bob-O'-Link Golf Club. Left to right, top row: Elmer Rietz; Tom Brown; C. E. Price; Jim Milliken; H. M. Hart; F. A. Hayes; T. A. Callaghan; J. M. Cusick; Herb Thomas; Ed. Heckel; E. T. Murphy; and Louis Narowitz. Middle row: Jack Floreth; Chas. Crone; Bob Weeks; Hans Kreisl; Jack Walsh; M. G. Henderson; R. E. Milager; Wm. Spillane; Francis Oelerich; O. L. McGinn; E. C. O'Connor; F. P. Kuchenbecker; E. P. Rich; Geo. H. Dickerson; G. H. Kraft; and S. J. Diringer. Bottom row: Harry Misch; Jess Stanfiel; Jean Jenson; R. J. Murphy; Joe Phillipi; R. B. Haywood; J. E. Quinn; W. C. Zingheim; Rev. J. P. Kiely; Jack Kiely; F. H. Gaylord; L. J. Pitcher; W. T. Walters; and M. B. Tillman

families who attended the eighth annual picnic of the Quad City Plumbing and Heating Industries

outing held at Conner's Cedar Grove Hotel, Waterwitch, N. J., August 1. Approximately 75 were present including George L. Bird, national secretary, Ernst Flentje, executive secretary of the national association, and Lester Wake, field secretary of the New Jersey state association. President Werner sent his regrets for not attending.

A ball game had been scheduled, but because of the excessive heat it was called after a few innings. Less strenuous sports such as pitching horse shoes, boating, swimming and fishing took up the afternoon. Guests present at the affair included Charles Vernon, Louis Becker, Fred Halbfoster, William Aiken and Denny Manning of the Elizabethtown Consolidated Gas Co.

Annual Outing

The Boston association of Heating, Piping and Air Conditioning Contractors will hold their annual outing at Belmont Country Club, September 2. President Klonower has appointed the following committee to arrange all details: K. P. Abbott; A. T. Papineau; Saul Appel; A. C. Bartlett; H. B. Buse; Maurice E. Chase; Edward F. Dunn; Joseph T. Dwyer; George F. Elliott; Harry Weigner; C. F. Flint; R. S. Franklin; Frank R. Hastie; George H. Priggin; Fred Scott; and A. D. Weber.

Heating Courses

Evening courses in heating, ventilating and air conditioning are being offered by the Polytechnic Institute of Brooklyn, New York, during the regular 1936-37 school sessions, according to an announcement of Professor E. F. Church, Jr., head of the department of mechanical engineering. Classes will be held on Wednesday and Friday evenings. This course will cover the calculations and design for heating and ventilating systems, including heat loss computations, boilers, piping, radiation, fans, air duct design, washers, humidifiers and auxiliary apparatus. The course in air conditioning will deal with advanced considerations in the field of the previous course, and will present fundamental scientific principles and their application.

Both courses of instruction will be presented by John James of New York City, a graduate of Oregon State College and University of Wisconsin, and now a member of the technical staff of the American Society of Heating and Ventilating Engineers.

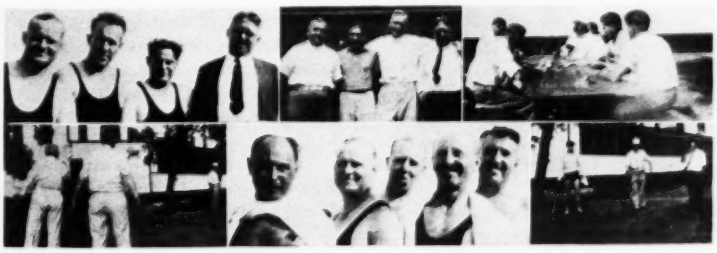
A. C. Bureau Outing

A golf tournament, a dinner and a moving picture show were the high-points of the third annual outing of the Air Conditioning Bureau, held at the Salem Country Club, Peabody, Mass., Aug. 6. Those who participated in the affair were: the local chapters of American Society of Heating and Ventilating Engineers, American Society of Refrigerating Engineers, National Assn. of Practical Refrigerating Engineers; and the Boston Oil Burner Assn.

Golf Tournament

The golf tournament was held with about 70 participating. Prizes were awarded to A. M. Haxie, with a gross score of 81; and to S. Ward with a gross score of 85. The chapter trophy was awarded to Amos Bartlett, who had a net score of 67. John Miller won first place for the lowest net score. Other prize winners in the Kickers' Tournament were: R. L. Sackett, J. Turner, L. R. Wallis, F. D. Knight, D. S. Boyden, E. B. Weeden, A. J. Seaburg, Z. L. White, L. Fiorriam, E. J. Keeney, O. W. Lawton, W. F. Marsh, L. Maynard, E. S. Kear, Lou Kimball, W. H. Dyer and E. W. Roemer. Prizes were also won by Lou Davies, for longest drive; D. Moulton, highest gross score; and Everett Ryan, winner of the treasure hunt.

Julius Daniels, president of Air Conditioning Bureau, was toastmaster at the dinner held in the evening. About 250 were present to see the prizes awarded. At the close of the dinner the toastmaster presented the following speakers: Harry Hood of the Salem Country Club; John S. G. Miller, vice president of B. F. Sturtevant Co., and president of Air Conditioning Mfg. Assn.; W. S. Wilkinson, vice president, Air Conditioning Bureau; Rudy Summers, president of local chapter of American Society of Refrigerating Engineers; James Holt, Professor of Institute of Technology; Ed. Roemer, building commissioner of the city of Boston; Howard Parks, vice president of Parks Cramer Co.; Rollen Hopkins, president of Boston Ice Co.; and Thomas Carron, vice president, Edison Co.



Taken at the outing of the Master Plumbers Assn. of Elizabeth and Vicinity. Left to right, top row: Joe O'Neill, Mr. Bischshausen, Morris Berg and F. B. Behm, all members of the outing committee; John C. Kleinhans, Oil Equipment Laboratory; Albert M. Kheim, member board of examiners; Nathan A. Apgar, president Elizabeth association; F. B. Behm; and a group playing cards. Bottom row: L. H. Kleinhans; Albert Thompson; Joe Shur; Joe O'Neill; Joe Daly; Ben Fischer; Everett Thompson; Symore Mallon; Geo. Kleinhans; and Morris Goldstein

Group picture taken at the outing given by the Kansas City association

Kansas City Picnic

The Kansas City association held a picnic at Fairyland Park, Kansas City, Mo., August 1. Representatives of manufacturers, wholesalers and journeymen also were in attendance, bringing the total to 600 people who enjoyed the various races, the ball game and the dinner which made up the day's program.

Lake Outing

Enjoying the cool breezes of Lake Michigan for a day, Chicago master plumbers, with their families and friends, attended the annual outing of the Chicago association on August 20. Between 200 and 300 members of the industry, which included master plumbers, supply men, their ladies and children, boarded the steamer "Theodore Roosevelt" for a trip to St. Joseph, Mich. Chairman of the committee on arrangements, T. W. Merryman, with his colleagues was on the job early to direct affairs.

The party enjoyed the trip to the Michigan shore. The committee had provided special musical talent in the form of strolling players. Cracker jack and ice cream were distributed to the children and guessing contests added interest to the occasion. Arriving at St. Joseph the members of the party were ready for luncheon and while some went to hotels and restaurants for the mid-day meal, the majority of the women brought basket lunches along which they enjoyed in Silver Beach Park. The children had a splendid time with rides in the amusement park which had been arranged by the entertainment committee.

On the return trip there was music and dancing in the marine ball room and the prize winners in the several contests were announced. The first prize was won by Helen Matthews in one of the contests, the second prize was won by Mrs. A. Glennon and the third prize by Walter A. Swierski. In still another of the contests, the prize was won by Albert Rothschild.

Those who were active in assisting Mr. Merryman in making the affair a success were Chris. Jespersen, C. J. Erickson, Gerald F. Mooney, Geo. Matthews, Wm. Redieske, and Secy. Peter M. Munn.

Pictures taken at the lake outing staged by the Chicago Master Plumbers Assn. August 20. Top row, left to right: T. W. Merryman, chairman of committee in charge, and Mrs. Merryman; Mrs. D. Munn; Mrs. Margaret Ward; Rupert J. Weber; Mrs. William Ward; Mrs. N. Johnson; E. J. Benning; Donald Munn; D. Munn; and L. P. Eaton and family. Middle row: A. H. Stadelman; E. J. Benning; Robert Hilton; J. Wade; W. J. Blyth; E. A. Dreier; Charles Harris; W. C. Faehse; Chris. Jespersen and family; Homer Robertson, Youngstown Sheet & Tube Co.; and William Peterson, Inland Supply Co. Bottom row: William Redieske; George Matthews; Al. Dwyer; D. Garvey, vice president, and Frank J. Bent, president, both of the journeymen's association; Mrs. Mele; Robert Hilton; Robert Hilton, Jr.; Michael Mele; and the children of Robert Hilton, Jr.

Md. Meeting

- *Annual outing held at Heintzmans Cottage Grove Beach — Attended by national and other state association officers—500 gather at successful meeting*

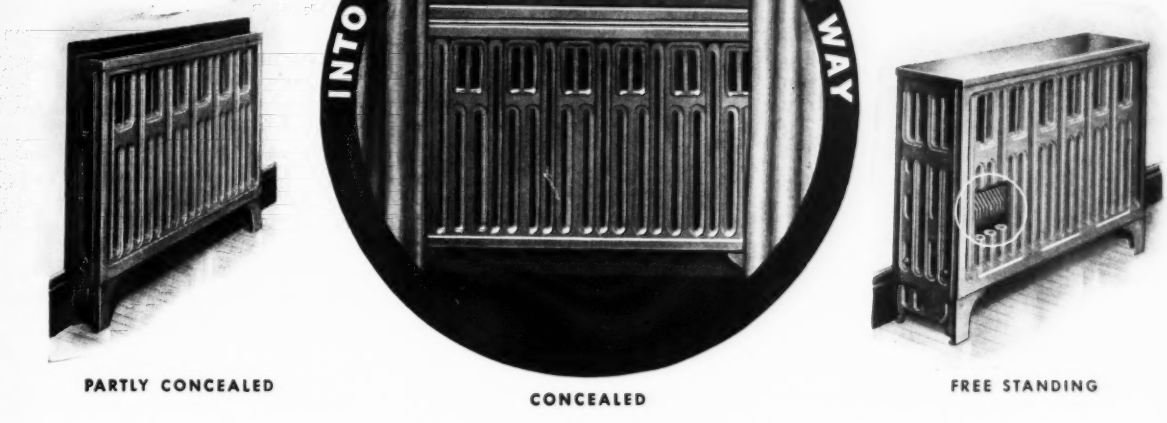
The annual outing of the Master Plumbers Assn. of the State of Maryland was held at Heintzmans Cottage Grove Beach, Md., August 13. Approximately 500 were in attendance including members of the Pennsylvania, Delaware, District of Columbia, New Jersey, West Virginia and New York associations. George Bird, national secretary; H. F. Weldin, president of the Delaware association; and Robert Barrett, past national president were some of the distinguished visitors at the outing.

A number of contests and races were held during the day as part of an entertainment program arranged by Charles Wachsmuth, chairman of the outing committee, and Samuel Houck who was in charge of the games.

The officers of the association are as follows: John M. Frederick, president; Walter B. Shaffer, first vice president; Edgar McLain, second vice president; Frank F. Breyer, treasurer; Thomas J. Thaler, recording secretary; D. F. Clark, executive secretary; and Rube Goldman, sergeant at arms.

One of the features of the entertainment program was a boiler plate race in which the object was to fit 36 bolts and an equal number of washers and

Versatility IS RAYDIANT'S OTHER NAME!



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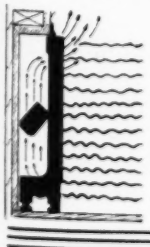
Full Concealment—For concealed heating, the Weil-McLain *Raydiant* is without a real rival. It goes into the wall and out of the way. Occupies *no* valuable floor space. Provides "concealed" heating without sacrifice of true radiator efficiency. Its live front panels are unobstructed by any grilles or cold metal front. Sends sun-like radiant heat down near the floor. Supplies convected heat, too, from cast-iron finned vectants, concealed behind the heat-radiating front panels.

As a Free-standing Radiator—Weil-McLain Raydiant (cabinet type) forms *its own* cabinet and provides its own "good looks." No extra costs at any time for top covers or expensive heat-robbing enclosures. Its flat integral heat-deflecting top checks wall smudging. Here is a free-standing radiator that women like. Simple facilities for low cost concealed humidifying are also available in this modern radiator.

As a Partly Concealed Radiator—Cabinet type Raydiant can also be partly recessed as shown at the above left. Special metal moulding trim is supplied to cover the clearance between the radiator and the top and sides of recess.

Write for Complete Details—Weil-McLain Raydiants take your bids out of the "price alone" class and enable you to meet *all* requirements from *one line* of radiators. Write for the complete story—there's a profit in it for you. Weil-McLain Company, General Offices: 641 W. Lake Street, Chicago, Ill. New York Offices: 501 Fifth Ave. Radiator Division: Erie, Pa. Boiler Division: Michigan City, Ind.



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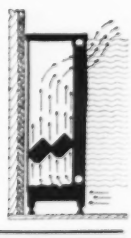
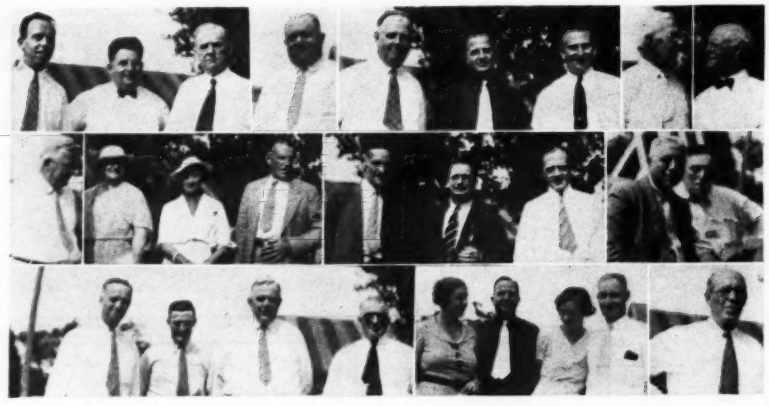




Pictures taken at the annual outing of the Maryland Master Plumbers' Assn. Top row, left to right: John Frederick, president association; Wm. F. Faustman, chairman board of directors; Francis C. Dorsey, past national director; Charles Wachsmuth, chairman of outing committee; Joseph Smith, manager Whitehead Metal Products Co., Philadelphia; Joseph Larmett, agent, American Brass Co., Philadelphia; H. F. Weldin, president Delaware state association; Sam Houck, chairman outing games; and Wm. F. Mylander, Baltimore. Middle row: Mr. and Mrs. Robert Barrett and Mr. and Mrs. J. C. McCarthy, both of Washington, D. C.; H. L. Curtis, George W. Mitchell and Clarence T. Melvin, all of Baltimore; Sidney Mayer, Burnham Boiler Corp., and John Hubert, Baltimore. Bottom row: C. A. Wagner, Kohler Co., H. R. Grinder, Robert Barrett, past national president, W. E. Miller, treasurer Washington, D. C. association, all of Washington, D. C.; D. F. Clark, executive secretary Baltimore association; James Larmett, American Brass Co., Philadelphia; C. W. Shields, assistant secretary association; George Bird, national secretary; and W. A. McPhail, president Jas. Robertson Mfg. Co., Baltimore.

nuts in holes in a piece of sheet metal. Each hole and bolt were of different size. President Frederick was the winner of this event. Prize winner in the contest for the longest golf drive was W. J. Culbertson.

Women's activities included a ribbon cutting contest, a potato race, a contest in blowing up balloons, an egg race and a golfing contest. Mrs. A. S. Simmering was the only one to win two events. She was awarded the championship in the ribbon cutting contest and was again a winner when she finished in a tie with Mrs. Fred Beyer in the potato race.

The balloon blowing contest turned out to be a long winded affair, but Mrs. Robert Cooper finally won the event when she succeeded in bursting the one she had first. Mrs. J. Hasselhoff was announced as champion after she had been able to knock a cotton golf ball farther than any of her rivals.

Contestants in the egg race had to run a certain distance holding an egg on a spoon and go the entire distance without dropping it. The winner in this race was Mrs. J. Wells.

Minneapolis Outing

Approximately a thousand persons were in attendance at the outing given by the Minneapolis Retail Plumbers' Assn. for those connected with the plumbing and heating industries. The outing was held on Saturday, Aug. 22 at Eagle Lake, Minn.

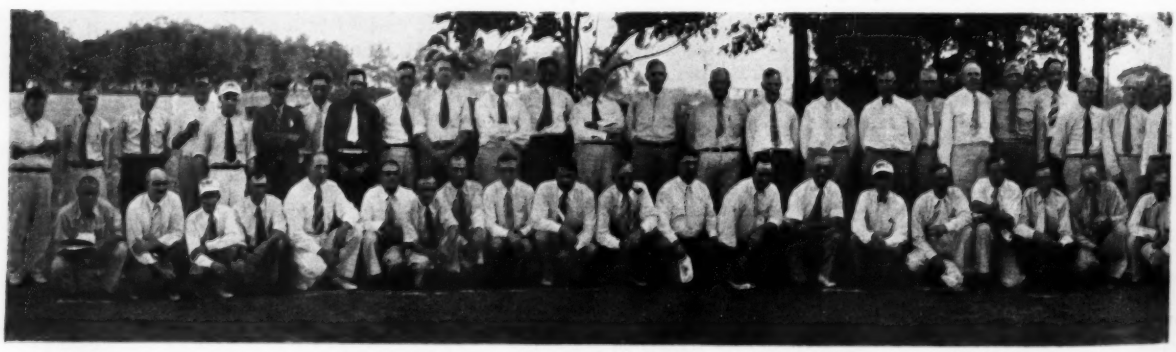
Arrangements for the affair were made by H. E. Guntzel, general picnic chairman, and Mrs. Frank Lamson, chairman for the women's auxiliary. Special events were planned by a committee headed by Mrs. Oscar G. Johnson and consisting of: Walter Bell, H. M. Hanson, Mrs. Arnold Bing, Mrs. Roy Heverly and Mrs. Irving Miller. Other committees were: Picnic Ground Committee, Robert Rubinger, Chairman, H. E. Guntzel and Mrs. B. W. Miars; Finance and Program, A. J. Williams, E. E. Roberts, I. Miller, Oscar Johnson, Mrs. Walter L. Bell, Mrs. V. E. Beaudry, A. McInery, Mrs. J. R. Brown and Mrs. A. J. Perry; Refreshments, W. E. Dahlstrom, chairman, B. W. Miars, Mrs. Hugo Guntzel, Mrs. J. L. Shoppe and Mrs. Robert Rubinger; Transportation, Mr. Gormley, chairman, and Mrs. J. R. Brown; Parking Committee, Mr. Gene Roberts, chairman; Dance and Orchestra Committee, Mr. Robert Rubinger, chairman, and Mrs. Oscar Johnson; and Publicity, Mrs. George Hineline, chairman, Mr. Roy Heverly and Mrs. Royal Berg. Mr. A. E. Harrow was treasurer of the picnic.

A series of games and contests furnished the entertainment program for the day.

Philadelphia Picnic

Threatening weather failed to spoil the picnic of the Philadelphia association held August 22, at Royersford, Pa. About 150 attended and participated in the various entertainment events. Winners in the men's events were as follows: Walter Krause, William McNamee, John Coleman, F. Nestle, W. Heintzleman and George Haufler. Ladies who were prize winners included Ruth Kraus, Mrs. Haufler, Mrs. Schmidt, Mrs. Dove and Mrs. Palfreyman. One of the features of the day was a tug of war between two teams.

Tickets were distributed to the children for the amusement park. Rain forced a halt in the basket lunch, but stopped after about an hour. Harry Stilwell, Sr., was chairman of the outing and picnic committee which was in charge of the day.



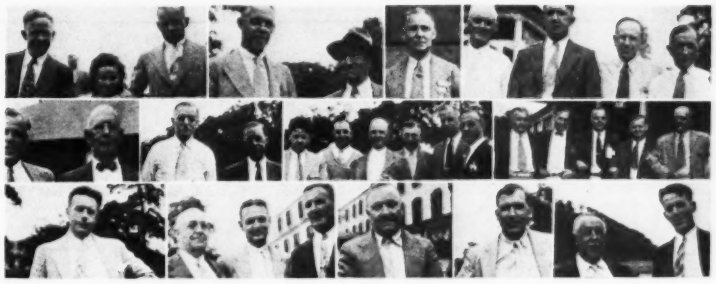
The picture on this and the opposite page were taken at Benton

Illinois Group

Under the sponsorship of manufacturers and wholesalers serving the same area and cooperating with the Illinois Master Plumbers Assn., a meeting was held at the Benton Country Club, Benton, Ill., July 23. Over 100 attended including twenty new members drawn from fifteen cities. The purpose of this meeting was to reorganize the master plumbers of southern Illinois.

William Brookman, secretary, Illinois association, acted as chairman of the meeting. Speakers on the program included: Harry C. Yelton, president, Inland Supply Co.; William J. Spillane, sales manager, James B. Clow & Sons; Henry P. Reger, past state president; and Wm. F. Hildeman, state treasurer.

A delegation from the Missouri association was in attendance and included: Edward Quinn, state president; D. C. Cunningham, president, St. Louis association; Edward Monteath, national director; E. J. Blake, secretary, St. Louis association; and Jerry Clancy, business manager, journeymens association of St. Louis.



Pictures taken at New Jersey state association outing. Top row, left to right: Ed Ingram, Jersey City, past state president; Muriel Ingram; George McVoy, Plainfield, president of N. J. State Assn.; John Morel, Scotch Plains, secretary; George Brenner, Orange, 2nd vice president; George Bird, secretary of N. A. M. P.; George Kisby, Atlantic City, past president of local association; E. J. Geyer, Bergenfield, 1st vice president N. J. State Assn.; Benjamin Labor, Atlantic City, past president local assn.; and Walter Compton, Atlantic City. Middle row: A. F. Ruehl, Newark, 3rd vice president; R. D. Condit, Thomas J. Lee, Inc., Irvington; Louis Maier, Newark; W. C. Day, Stone Mfger's Corp., Newark; John Klimback, Essex Fells, president of local association; John Heyrich, Montclair; Joseph F. McGinity, Charles Meyers, W. V. Egbert & Co., Newark; Ken Cosgrove, W. V. Egbert & Co., East Orange; E. R. Galbraith, W. V. Egbert & Co., Morristown; J. C. Kleinhans, Arthur Kleimig, Chas. K. Vernon, Joe O'Neill, Geo. P. Kleinham, all of Elizabeth. Bottom row: Dan Harris, Good Mfg. Co., New York; E. E. Sqier, Bell & Gossett Co., East Orange; Paul Zeim, Bloomfield; F. Robinson; U. S. Radiator Corp., A. Svenson, Newark; F. A. Smith, New Brunswick; Robert M. Fielder, Trenton Potteries; and Wm. Stickels, Josam Mfg. Co.

State Outing

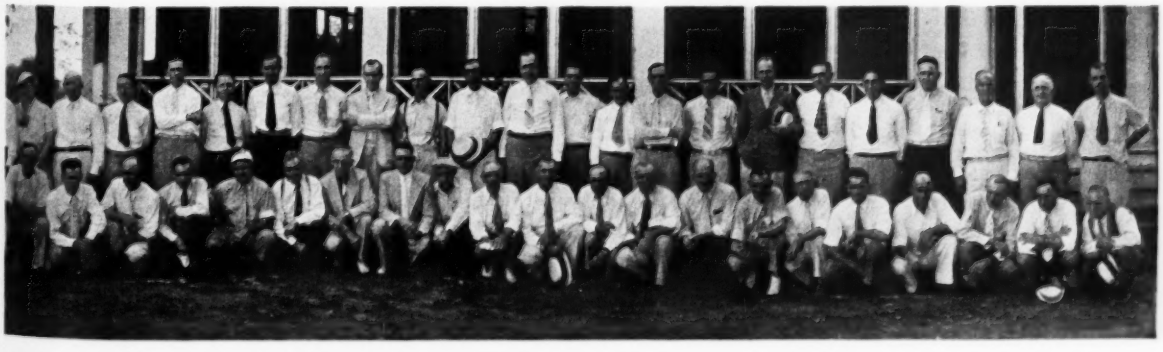
The second annual outing of the New Jersey State Assn. of Master Plumbers was held August 27, at Conners Cedar Grove Hotel, Waterwitch Beach, Highlands, N. J. The outing was well attended by master plumbers and their families as well as by jobbers, manufacturers and salesmen.

Following luncheon the afternoon was taken up with games and activities for both the women and men. The winners of the womens' contests were Mrs. John Heyrich, Mrs. L. A. Wake, and Mrs. Edward Ingram who were each given a prize. There was a very hard fought and exciting broom polo game between the master plumbers and the salesmen, with the master plumbers coming out on the long end of a 4 to 2 score. The master plumbers were also victorious in a soft-ball game.

Joe O'Neill and Geo. Kleinhans were the winners in the horse-shoe pitching.

The outing was arranged by Geo. Brenner, chairman of the entertainment committee; Albert F. Ruehl; and Edward Ingram. John Morel was chairman of the sports committee made up of Paul Ziem; and C. John Klemback. Geo. Brenner was chairman of ladies games and Clyde Cole was chairman of house games.

Some of those who attended the outing of the Philadelphia association at Royersford, Pa. Top row, left to right: Robert Pflug-Felder, secretary; Harry Stilwell, Sr., chairman of outing committee; George Hicks, past president; Philip Hering, Sr.; James Soehle; Philip Hering, Jr.; and John Kenny. Bottom row: William Frey; Henry Kramer; John Hering and son, John; and a group picture



Country Club, Benton, Ill., on the occasion of a meeting held July 23

MAIL THE COUPON

This is for Your Memo:

October 5-6-7

AT PHILADELPHIA

ANNUAL CONFERENCE OF THE NATIONAL INDUSTRIAL ADVERTISERS ASSOCIATION

"The Importance of Heavy Industry in the Future of the U. S. A." . . . "Industry's Public Relations Problem" . . . "Improving Advertising Through Better Company Organization" . . . "The Place of the Agency in Industrial Advertising" . . . "Introducing a New Product" . . . "Advertising Department Problems" . . . if you're interested in the authoritative discussion of these subjects by practical leaders —here's the year's one big opportunity! Join this conference of industrial advertisers!

Member or non-member, it makes no difference; everyone interested in the future of Industrial America will want to participate.

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National Bureau

- *National Bureau of Heating and Air Conditioning continues activities during summer months—Direct mail material scheduled for early release*

The plan and position of the National Bureau of Heating and Air Conditioning in selling air conditioning with radiator heat has been consolidated by activity carried on during the summer months. As readers of DOMESTIC ENGINEERING know,* the bureau has been incorporated under the laws of New York and is in existence as the national agency for promoting the sale of air conditioning with radiator heat. J. Lawrence De Neille is president of the new bureau.

Chicago was the starting city for the campaign conducted by the bureau. Over 3,000 contractor-dealers, wholesalers, manufacturers, architects and engineers attended a series of meetings there and heard the advantages of air conditioning with radiator heating presented. Now the campaign is spreading to other cities, not only in this country, but in Canada as well.

Here is a new story and a new sales argument for all those in the industry. The work of the new bureau is to unify and coordinate that story and those sales arguments so that every home owner and everyone contemplating the construction of a home will be able to hear the advantages of installing air conditioning with radiator heat.

As part of the work of the bureau, a consumer booklet and a quantity of direct mail material already are in the hands of the printer and will be ready for distribution in the near future. The bureau also intends to carry on its program of holding a series of contractor meetings in various cities as the cities qualify in their organization for the campaign. Another plan of the bureau is to see that all heating contractors and distributors of heating material are supplied with copies of the literature which now is in preparation.

Several leaders of the industry have been contacted as to their views on the work of the bureau. Their comments follow: ". . . I really believe this bureau is going to do a constructive and far reaching job. What they do will depend to a great extent on the demand that comes from the trade," Marshall Adams, manager advertising and sales promotion, American Radiator Co. "We plan to furnish all heating contractors and distributors of heating materials with sample copies of the bureau's literature so that the industry nationally will know what is being done in selecting territories," Russell G. Creviston, director advertising and sales promotion, Crane Co. "The plan of the bureau is to continue the series of contractor meetings in various cities as the cities qualify in their organization for the campaign," Joseph C. Fitts, secretary, National Bureau of Heating and Air Conditioning.

*DOMESTIC ENGINEERING, August 1936, p. 117. July 1936, p. 76.

Sold—With Radiators

- *House emphasizing radiator heating is sold immediately and helps to restore building to area where new construction was at a standstill*

The assistance which radiator heat can and does provide in selling homes is exemplified by a model home erected—and sold—some months ago in Montgomery County, Pa., an area adjoining Philadelphia on the north. Also demonstrated by this home are the results made possible by active, directed manufacturer-wholesaler cooperation.

The purpose of this home, which was built late last spring, was to stimulate building in Montgomery County, where new home construction had been almost at a standstill. Raymond C. Green Co., a plumbing and heating supply house in Jenkintown, Pa., which depended upon this area for volume business, and the Philadelphia branch of American Radiator Co. were prime movers in the promotion, as they felt that the time was ripe for a model home which emphasized heating.

Syndicate Formed

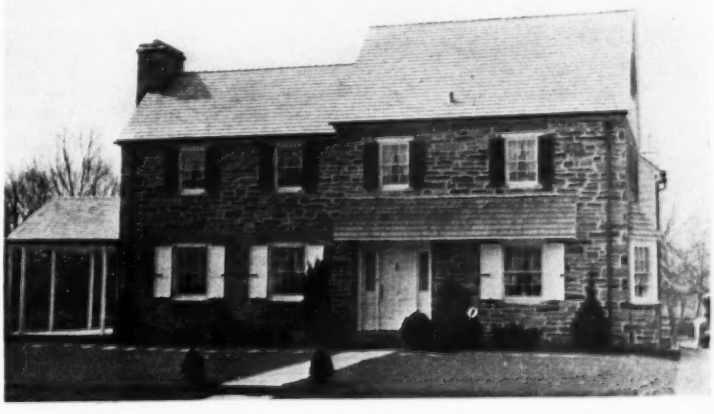
As a result of these efforts a syndicate was formed. A home which would be an exceptional value at $14,000 was scheduled for construction. This syndicate comprised men who would benefit by a renewal of construction in this vicinity and who agreed that it was time "to start something," with profits a matter of minor importance.

Widespread newspaper publicity was obtained, the *Philadelphia Inquirer* printing a photograph of the artist's sketch of the house and a story concerning it, telling of the ground-breaking ceremony. Also, many local papers in Montgomery County carried similar stories, pictures of the home and the names of prominent local officials and business men who attended and took part in the ceremonies. All of this provided excellent publicity for the home.

Effect of Home

A statement by one of the men who played a major part in the promotion of this model home is indicative of the results obtained. He declared: "It is impossible to trace the precise effects of the ensuing publicity in the revival of building in this section of Montgomery County. That new home construction has come to life there is true, however, and some facts indicate the effect of this model home.

"The syndicate members were astonished at the number of people who stopped on Saturdays and Sundays to view the progress of contruction. When the house was nearing completion, these folks went inside and looked around at their leisure. It is estimated that several thousand people visited the house during construction. This interest in housing was not lost by the build-



This is the house that was sold with the assistance of radiator heat

ing fraternity. It provided evidence which stimulated their ideas. Since that time construction of homes in this area has increased markedly.

"The house was sold before completion, and there were three willing buyers for the purchase. As a result the syndicate proposed to build several more houses—two on the same street and three in the vicinity. The early sale of the house in question was premature so far as our plans were concerned. We had expected to draw many thousands of people to the house in the two-week period following completion."

Heating Plant Important

The heating plant was a most important factor in the sale of the house, it was reported, the wholesaler interested going to the house with the realtor and buyer, explaining the comfort and economy of the radiator heating system installed. Insulation of the building provided another telling sales argument, the prospect being particularly interested in the important part it plays in the control of warmth distribution and in the operating economy of the heating plant. In short, the sale of this home offers another indication of the strong, potential sales arguments and incentives which modern radiator heating provides in home construction.

Need for Sanitation

After visiting seven state parks in Michigan and Wisconsin during a 1,500-mile vacation trip with his family in a trailer, Norman J. Radder, secretary of the Plumbing and Heating Industries Bureau, has returned to Chicago with first-hand observations of the need for improvement in toilet facilities in parks.

"While states are to be commended for their foresight in setting aside large areas for recreation purposes, and while the scenery, roads, beaches, and

This is the trailer in which Mr. Radder spent his vacation

water supply are everything that could be desired, the toilets, for the most part, are still of the Chick Sale type," Mr. Radder said.

"In many cases the toilets are primitive and not even up to the fly-proof standard set by the PWA in its work-relief projects in rural districts.

"In other cases where flush toilets have been installed, insufficient personnel is provided to take care of the toilet rooms with the result that many bad conditions prevail.

"I also observed that in many cases the fixtures used where water is available are not of the type best adapted for public toilet rooms.

"Confronted with the problem of budgeting a limited sum between the many improvements needed in parks, it is obvious that many superintendents have favored roads, beaches and golf courses instead of devoting some money to providing adequate toilet facilities.

"With a large increase in the number of persons seeking recreation in parks, state park administrations are confronted with a serious problem in providing the adequate protection to health which flush toilets alone can give.

"If state funds are insufficient to provide for adequate and modern toilet facilities, it would seem that park administrations should face the problem realistically and set up a small admission fee to the parks in order to cover the cost of these improvements so necessary to health and the full enjoyment of the parks.

"Apparently tourists are expected to take all of their baths in the lake," Mr. Radder observes. "If it's too cold or the tourists object to bathing on a rocky shore, it's just too bad.

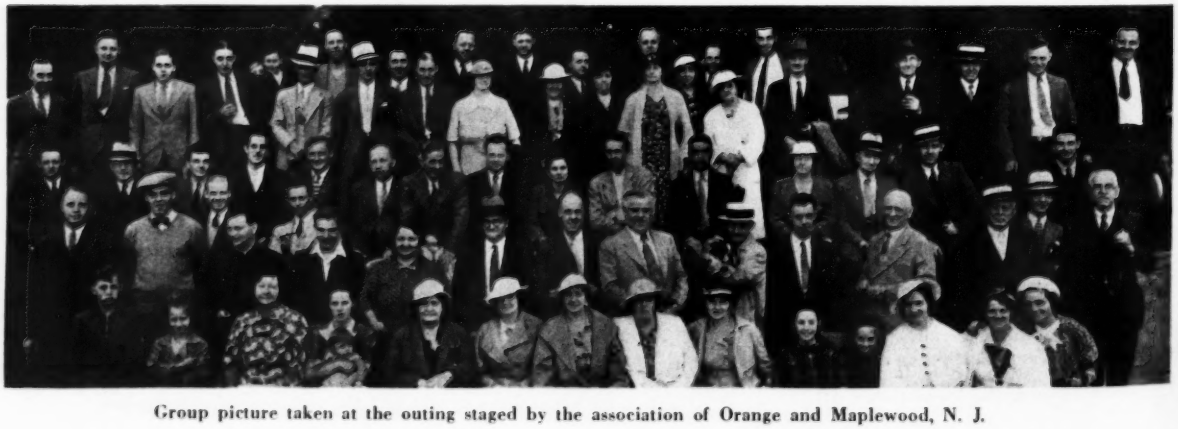
"In one of the seven state parks which I visited I found shower facilities under construction. I also noted that some cities have provided showers in city tourist parks. As a whole, however, the park administrations so far have failed to provide showers."

N. J. Outing

Bertrand Island Park, Lake Hopatcong, was the scene of the annual outing of the M. P. Assn. of Orange and Maplewood, N. J., held on Aug. 6. A baseball game between the salesmen and the plumbers, in which the plumbers won, a luncheon and a dinner and a series of contests were the features of the outing.

Arrangements for the affair were made by Harold A. Johnson, chairman; Willard Durr and George Brenner. Among the guests were: Charles Weinning, N. J. excise commissioner; M. Robertshaw, president of the local association; George Brenner, second vice president of the state association; Al Ruehl, third vice president of the state association; Mrs. Ruehl, president of the ladies auxiliary; and Florence Hoffman, vice president of the ladies auxiliary.

Prizes were awarded to Mr. Carl of Esslegroth and Leo Sudhaus of H. B. Smith Co., winners of the quoit game; Harold A. Johnson, Jr., of H. A. Johnson Plumbing, Htg. & Oil Burner Corp., for threading and cutting a 2 in. pipe; Mr. Methesise, winner of the nail drive; Willard Durr, winner of the Skee ball game; M. Robertshaw and Mr. Methesise, winners of the three-legged race; and Mrs. Willard Durr, who won the ladies race.



Group picture taken at the outing staged by the association of Orange and Maplewood, N. J.

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Anaconda Copper Tubes

For Heating Lines

Copper is the "last word" for heating lines. You can now sell an installation of Anaconda Copper Tubes and Anaconda Solder-Type Fittings for practically *the same price* as piping that rusts. And it's easier to sell because the buyer gets more for his money in maximum length of service, greater efficiency, more economical heating. Copper tubes provide:

Reduced heat losses

... because hot water conveyed through copper tubes loses only about *one-half* as much heat as when black iron is used.

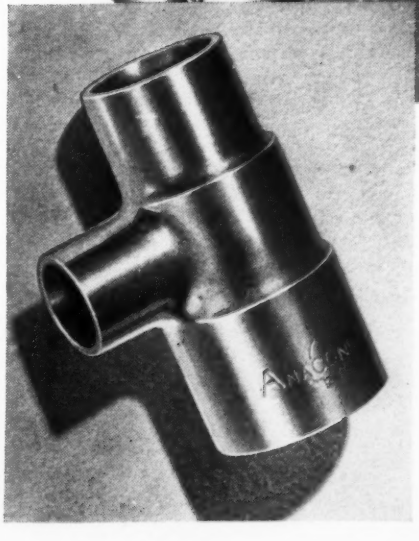
Permanently smooth inside surfaces

... which reduce resistance to flow, especially in forced circulation systems.

Quicker circulation

... the maximum amount of heat delivered to radiators in the least possible time.

The odds are all in your favor when you do up-to-the-minute work with the latest and most efficient materials ... when you give your customers more for their money. Go after your fall and winter business with Anaconda Copper Tubes!



Anaconda Copper Tube, Type K, is THE material for heating line purposes. (Inset) Three-way, *seamless* wrought copper reduction fitting.

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Anaconda Copper Tubes and *a complete line* of Anaconda "Solder-Type" Fittings ... trade-marked for easy identification ... are hydraulically tested to insure soundness, and produced to the close tolerances necessary for tight, leak-proof joints. There is an Anaconda Fitting for every copper tube requirement in plumbing, heating and air-conditioning. 3664

Anaconda Copper Tubes

THE AMERICAN BRASS COMPANY, General Offices: WATERBURY, CONNECTICUT

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Taken at the annual outing of the Bronx Master Plumbers Assn. at Schmidt's Farm, Westchester County, August 19

Bronx Outing

The Bronx Master Plumbers Assn. held its annual outing August 19, at Schmidt's Farm in Westchester County. There were about 150 present, including master plumbers and their families together with wholesalers, manufacturers and salesmen. S. George Arnone, president of the New York state association; Frank R. Roth, president of the Bronx association and secretary of the New York state association, and Sam Berg composed the committee in charge of the affair.

The feature of the afternoon was a baseball game between the plumbers and the supply men, which proved to be a very hard fought and exciting game throughout. However, the plumbers by a great rally were able to subdue the supply men with a score of 11 to 10.

The main attraction came in the evening when a delicious shore dinner was served. Following the dinner there was a drawing by the master plumbers and their wives, for a thirty-gallon copper boiler. The boiler was won by Mrs. Fred J. Riehm.

Steamfitters Golf

The annual golf outing of the Chicago Master Steamfitters Assn. was held at Medinah Country Club, August 25. Despite extremely bad weather conditions, more than 200 turned out for the day. The rain let up long enough to permit most of the players to finish nine holes. The banquet held in the evening was a great success. Henry Reger, new president of the association, was introduced and gave a short talk. Prizes were distributed by William Hoier, John Hanson and Edward Peacher.

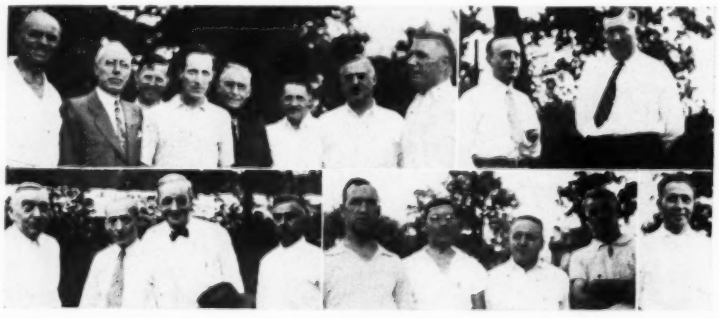
Baltimore Outing

The annual outing of the Master Plumbers' Assn. of Baltimore City was held on August 5, 1936, at Workmen's Circle Shore, North Point Road, Maryland.

Approximately 150 master plumbers, their families and guests gathered at the association's headquarters in the morning and, led by a police escort, then started their parade in automobiles through the city to the shore grounds. All the automobiles displayed banners and stickers of the association.

Upon arrival at the resort a chicken dinner was served and throughout the afternoon games were played by the children and contests conducted for the grownups.

The guests included officials from the Baltimore City health department, plumbing and heating wholesalers and manufacturers, representatives from the Maryland Master Plumbers' Assn. and the Progressive Plumbers' Assn. of Baltimore City. The committee in charge of the affair was: Robert Frank, chairman; Hyman Shindel, Reuben Braudes, Benjamin Levenson, Benjamin Roll, Arthur Neuman and Joseph Walpert.



Taken at annual golf outing of the Chicago Master Steamfitters Assn. Left to right, top row: Jack Kiely; Thomas Hanley, Jr.; Edward Peacher; Roy Getschow; Thomas Hanley, Sr.; Leo Wacholz; William Hoier; John Howatt; Harry J. Lagodzinski; and Joseph W. Bunge. Bottom row: Fred Dilzer; Claude Ellis; Andy Sheehan; Otto Wurster; Richard Standaert; Ray Olsen; H. R. Sorenson; Louis Bruner; and Louis Bandet

College Course

The Columbia School of Architecture will hold courses beginning this fall on building acoustics, air conditioning and allied subjects. The teaching staff, according to Prof. George M. Allen who will direct a new program in University Extension, will consist of physicists, architects and engineers. Two courses will be given in air conditioning. One will explain equipment and theory of processes for air conditioning and the other will deal with technical requirements underlying design, installation and operation of equipment.

Air Conditioning

New York University, through the Evening Division of the College of Engineering, is offering a two-year course in heating, ventilating and air conditioning, which leads to a certificate in that field. The course is open to four-year high school graduates, but exceptions are made in some cases where students desire to take individual subjects. The instructors are regular members of the faculty of the College of Engineering and other specialists in the field. Complete information may be obtained from the Director of the Evening Division, College of Engineering, University Heights, N. Y.

Obituaries

W. T. Perry

William Thomas Perry, 62, plumbing contractor of Montgomery, Ala., died suddenly Aug. 24. Mr. Perry was in the plumbing contracting business for twenty years. He was a member of the local master plumbers' association. His widow and a daughter survive him.

F. A. Strail

Frederick A. Strail, eastern sales manager for Ohio Brass Co., Mansfield, Ohio, died at his home in Baldwinsville, N. Y., on August 14. He had been a resident of Baldwinsville for 27 years. He is survived by his widow, a daughter and a grandson.

R. S. Murray

Robert S. Murray, 68, former treasurer of the General Electric Co., died recently at his home in Schenectady, N. Y. He had been in poor health for a year and retired from his position in May of this year. Mr. Murray had been with General Electric for 43 years.

M. A. McKale

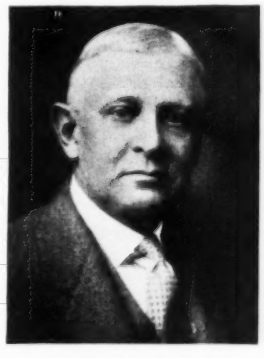
Michael A. McKale, 58, plumbing contractor-dealer of Piqua, Ohio, died recently in Dayton, Ohio. Mr. McKale was born in Ireland and came to this country when he was ten years old. He is survived by his wife, a daughter, three sons, two brothers and three sisters.

T. M. Landers

Thomas M. Landers, 48, chief plumbing inspector of Richmond, Va., died recently after a short illness. Mr. Landers had been chief inspector for ten years, taking over the position upon the death of his father in 1926. He is survived by his wife and two sons, a brother and three sisters.

Charles Peck

Charles Peck, contractor-dealer of Greenfield, Mass., died August 10 at his



Charles Peck

home in that city. Mr. Peck was a past president of the Massachusetts State Assn. of Master Plumbers and was also a former director of that association. He is survived by his wife and a daughter.

J. D. Davidson

Joseph D. Davidson, 716 W. Allegheny Ave., Philadelphia, Pa., for many years a plumbing contractor, died recently after a long illness.

G. J. Zanone

George J. Zanone, 54, a plumbing contractor-dealer of Louisville, Ky., died recently at his home at 1715 Bonnycastle Ave., in that city. He is survived by his widow, a son, a daughter, two sisters and four brothers.

J. J. O'Donnell, Jr.

John J. O'Donnell, Jr., a member of the Master Plumbers' Assn. of Philadelphia, passed away in that city, August 25. Mr. O'Donnell conducted a business at the corner of Ringgold and Reed Sts. in Philadelphia.

C. S. Cawthorne

Charles S. Cawthorne, 62, assistant treasurer of American Steel & Wire Co., died at his home in Lake Bluff, Ill., Aug. 14. Mr. Cawthorne became associated with American Steel & Wire Co. in 1901. For the past twenty years, he has been cashier and assistant treasurer in the Chicago office.

BEATON & CORBIN

No. 1 Wells Patent

Floor and Ceiling Plates *for* Copper Service Tube

History repeats itself. In 1893 Beaton and Corbin Mfg. Co. made the first floor and ceiling plate for Iron Pipe. In 1936 Beaton and Corbin leads again in offering the No. 1 Wells Patent Floor and Ceiling Plate to fit K. L and M Copper Service Tube. The No. 1 Plate is similar in design to the famous No. 10 B & C Plate. The excellence of finish, construction and appearance that has established the Beaton and Corbin Line of Plates as the Standard everywhere, has been embodied in the newest addition.

Copper and chromium finish are available at a reasonable extra.

Beaton and Corbin Plates are stocked by Recognized Wholesalers throughout the country.

The Beaton & Corbin Mfg. Co.
SOUTHINGTON CONN.

J. A. Haley

Joseph A. Haley, plumbing and heating contractor of Charlotte, N. C., died recently at Raleigh, N. C., where he was supervising construction work. He

J. A. Haley

was one of the first presidents of the state association.

N. L. Danforth

N. Loring Danforth, 56, a past president of Heating, Piping and Air Conditioning Contractors National Assn., died August 28 at his summer home in Rosa Hill, Ontario. Mr. Danforth resided in Buffalo, N. Y. and was a former president of the chamber of commerce.

New Contractors, Business Changes

San Francisco, Cal.—I. D. Chadbourne has engaged in the plumbing and heating business at 424 Dewey Blvd.

Los Angeles, Cal. — The Mission Plumbing Service has been established at 166½ N. LaBrea Ave., under the management of Jack K. Hampton.

Miama, Fla.—The J. J. L. Plumbing Co., has been incorporated by P. V. Klein, Ellis Klein and H. Spaulding.

San Francisco, Cal. — The Hayes Plumbing Co. has engaged in business recently at 1152 Fell St.

Houston, Tex.—The Stewart Plumbing Co., has been chartered by W. J. Callahan, 4307 Canal St., and a group of associates.

Convention Dates

September 11-12.—TEXAS WHOLESALERS.—State meeting of the Wholesale Distributors Assn. of Texas, at Galveston, Tex.

September 12-14.—NEW ENGLAND.—Fall convention of the Plumbing & Heating Wholesalers of New England, Inc., at Portsmouth, N. H., with headquarters at the Wentworth-by-the-Sea.

October 9-10.—INSPECTORS.—Convention of the Pacific Coast Plumbing Inspectors Assn., in Oakland, Cal.

October 12-18.—A. G. A.—Eighteenth annual convention of the American Gas Assn., at Atlantic City, N. J.

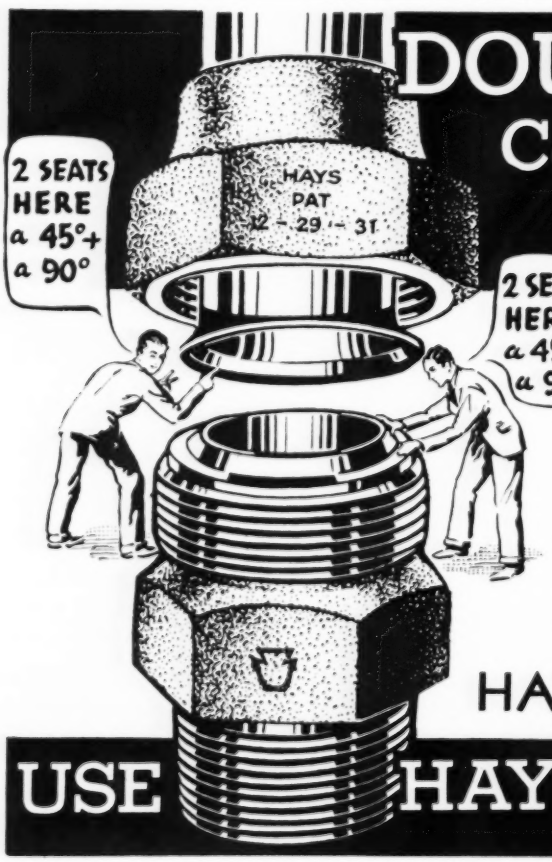
October 19-23. — WELDING SOCIETY.—Seventeenth annual meeting of the American Welding Society, at Cleveland, O., with headquarters at the Hotel Cleveland.

October 21.—E. S. A.—Semi-annual meeting of the Eastern Supply Assn. in New York City, headquarters at the Hotel Astor.

October 28-29.—C. S. A.—Meeting of the Central Supply Assn., in Chicago, with headquarters at the Morrison Hotel.

November 18-20.—ACETYLENE ASSN.—Thirty-seventh annual convention of the International Acetylene Assn. at St. Louis, Mo., with headquarters at the Jefferson Hotel.

December 16-18.—WARM AIR ASSN.—The winter meeting of the National Warm Air Heating and Air Conditioning Assn. to be held in Chicago, with headquarters at the Stevens Hotel.



DOUBLY SEALED
Copper to Copper
No Sealing Agent Required

There it is big enough to see at a glance—the Hays Double Seal Connection. See how the 2 seats (45° plus 90°) of the copper pipe sit snug on the 2 machined seats (45° plus 90°) of the Double Seal fitting.

It's copper to copper in 2 points of contact—doubly sealed—doubly tight with no sealing agent to ever worry about.

Wherever Copper Pipe goes Double Seals go too for they withstand far greater stresses of pull, twist, bend, vibration and freezing than are ever demanded in ordinary service.

Use Double Seals with the knowledge that they match your skill and "do you proud" on any copper pipe work. Write for 24 page catalog that tells the complete story.

HAYS MFG. CO., ERIE, PA.

USE HAYS Double Seals 400 STYLES AND SIZES
Approved by Underwriters' Laboratories

Women

Conducted by . . . Dorothy Edwards

Summer Outings Enjoyed

- *Women join with the men's organizations in picnics and lake cruises—Games and races features of the entertainment programs*

During the past month, vacations, picnics and outings were enjoyed while business meetings were discontinued by most of the auxiliaries. Many of the women, with their husbands and families, attended outings sponsored by the various master plumbers' associations. Games and races of various kinds were features of the programs planned by a number of the entertainment committees and it is reported that some of the women showed unsuspected talent in balancing eggs, potato races, and similar contests.

Among such outings was the one held at Heintzman's Cottage Grove Beach, Md., on August 13, by the master plumbers of Maryland and their wives and children, with many guests from neighboring states.

On August 20 a number of Chicago women, with their husbands and families, enjoyed a lake trip planned by the Plumbing Contractors' Assn. of Chicago. The "Theodore Roosevelt" carried the party to St. Joseph, Mich., where a pleasant day was spent at the beach and Silver Beach park. During the trip home music was provided for dancing and guessing contests were held. Helen Matthews captured the first prize in the drawing contest while Mrs. A. Glennon won the second prize.

Mrs. Al Ruehl and Florence Hoffman, president and vice president respectively of the women's auxiliary at Orange, N. J., were among the guests at the annual outing of the Master Plumbers' Assn. of Orange and Maplewood, N. J., held August 6 at Bertrand Island Park, Lake Hopatcong. Luncheon and dinner were served. The women present took part in various games and contests and Mrs. Willard Durr was the winner of the ladies' race.

Approximately one thousand persons attended the all day picnic of the Minneapolis Pipe Trades Industries, air conditioning and plumbing and heating organizations, which was held August 22 at Eagle Lake, Minn. Mrs. Frank Lamson was chairman for the auxiliary in making general arrangements, while a number of the women served on the various committees and did their share to make the affair a success. A number of special events were arranged for the amusement of the crowd, and coffee and ice cream were served to all.

A few of the ladies at the Philadelphia association outing. Top row, left to right: Mrs. George Hicks; Mrs. Robert Pflug-Felder; Mrs. Harry Stilwell, Sr.; Miss Gotch; Mrs. Schaumm; and Mrs. G. Anderson. Bottom row: Mrs. T. H. Craige; Sally Ann Craige; Mrs. Philip Hering; and Mrs. John Hering

August 22 was also the date of the picnic held at Royersford, Pa. by the members of the Master Plumbers' Assn. of Philadelphia and their families. Prize winners in events for women included Ruth Kraus, Mrs. Haufler, Mrs. Schmidt, Mrs. Dove and Mrs. Palfreyman.

Mrs. Fred E. Perkins was one of the speakers in a short program following the turkey dinner served at the twelfth annual outing of the Master Plumbers' Assn. of Newton, Mass., held at Stow Country Club July 29. Mrs. Geo. Carey, Mrs. Paul Urpin, Mrs. Fred E. Perkins, Mrs. J. J. Downey and Mrs. Fred Warren were winners in various events for women during the entertainment program.

Call to Action

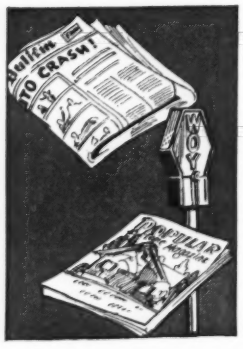
- *Mrs. Kuetemeyer explains rules for membership contest awards—Urges renewed effort*

One of the most important features of the auxiliary program for the coming year is the campaign to secure new members. This campaign continues the contest which took place last year, but a change has been made in the prizes to be awarded the winning auxiliaries. In a message to the members, Mrs. F. C. Kuetemeyer, president of the national auxiliary, explains this change and issues a call to action on the part of each auxiliary. Mrs. Kuetemeyer's message follows:

"Instead of the auxiliaries of a state division working for a state prize as heretofore, this year each individual auxiliary works for itself whether it belongs to a state division or not, and the one who can show the greatest increase in membership will receive a prize of $10.00 to be awarded at the next convention. If any new auxiliaries are formed during the year, the new auxiliary which can show the greatest number of members also gets a $10.00 prize.

"Now let us all put our shoulders to the wheel and see who will be the winners this next year. Illinois won the state prize at the Buffalo convention and Philadelphia the local prize.

"Let us make this the outstanding year in the history of the Womens' Auxiliary to the N.A.M.P."



Recognition

Over Radio . . . In Newspapers . . . Thru Magazines . . .

● *The first step in any selling effort is securing publicity. If a product or a service is not known to the public it does not sell no matter what its quality. Our industry is fortunate in receiving a large amount of favorable publicity which day by day goes to all sections of the country, carried by newspapers, magazines and the radio. In the following columns is a small portion of the recognition that is being accorded the products and services of our industry, and thus promoting sales.*

The White House Tub

The following article reprinted from *The Christian Science Monitor* of July 31 shows that plumbing is of sufficient interest to the majority of readers to warrant publishing reports on the subject. That this is the case shows something else—interest is the forerunner of sales; consequently, those same readers whose interest caused the article to be published constitute a buying group which contractor-dealers should find comparatively easy to sell. The article follows:

"If somebody should ask you to make up offhand a list of the Presidents of the United States, you might overlook two or three. Among the forgotten might be Millard Fillmore who finished the four year term of Zachary Taylor. During his tenure there occurred nothing of great importance, and consequently the American histories briefly cover his presidential service. 'Take him all in all,' an admirer of Mr. Fillmore wrote in 1851, 'he is one of the most remarkable men our country has produced—remarkable for his appearance, remarkable for his fortunes, remarkable for the dignity, the prudence and the wisdom of his administration.'

"A newspaper correspondent avowed that Fillmore was the best looking of all the Presidents who had occupied the White House. 'What's in a name?' Shakespeare asked. The very surname of Fillmore has an aquatic significance. Therefore, it is scarcely surprising that Taylor's successor dared the wide disfavor of the people some 85 years ago, endorsed the fledgling bathtub, had one installed in the White House and was called by the conservatives, 'The Apostle of Luxury.' The bathtub had long been popular in England, but in America doctors condenmed its as unhealthful. It was roundly denounced as an undemocratic device, a luxurious toy and a plaything of the aristocracy. Virginia levied an annual tax of $30 on each bathtub and some cities outlawed it altogether.

"Four months after his introduction to the Adam Thompson tub in Cincinnati (Fillmore had visited that city and bathed in a mahogany tub originally owned by Adam Thompson) the Vice President stepped up to the Presidency. In a few months Millard Fillmore began planning the addition of a bathtub to the other conveniences in the White House. He directed the Secretary of War to ask for bids. A Philadelphia firm was awarded the contract, and in 1851 it installed a large cast iron tub which was used by Fillmore and all later Presidents up to the first term of Grover Cleveland.

"Though widely cartooned as 'the Apostle of Luxury,' Millard Fillmore and his family continued the use of the device which had been roundly denounced by many. His endorsement set the bathtub definitely on the road to an enduring popularity."

Question

The following item which was sent out to subscribing newspapers by the Associated Press recently, is another evidence that people are sufficiently interested in plumbing for newspapers to carry accounts about it. This, in itself, is an indication that people are predisposed to buy for interest is the first step in selling. The item said in part:

"A brace of old sunken marble bathtubs down in the caverns beneath the capitol, sorely in need of a good scrubbing, revived something of a major mystery. Laborers discovered the dust-caked tubs recently. Whether Senators ever used the tubs in the Capitol is part of the mystery. The tubs decorated with carved brass spigots, were found built into dank foundations of the building.

"'What about those bathtubs?' David Lynn, Capitol architect, was asked. Admitting he had heard of them years ago, the architect delved into volumes dedicated to the origin of statues and equipment of the Capitol, but to no avail. He called in Arthur E. Cook, supervising engineer of the Capitol.

"'I've been here more than 40 years,' said Cook shaking his head, 'and I've never been able to find out anything about them'.

"'I guess it's one of those unsolved mysteries,' said Mr. Lynn."

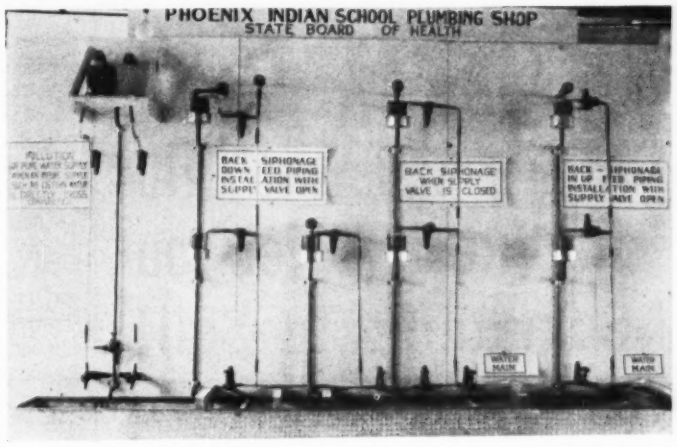
Modernized Economy

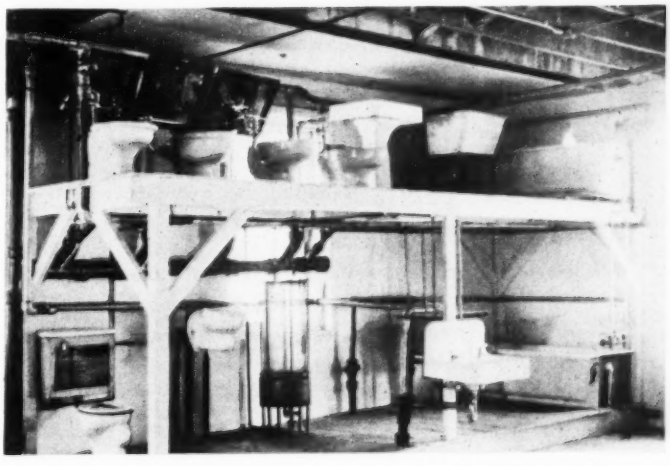
Indicative of the publicity which is being given to plumbing modernization by newspapers all over the country and further showing how an alert firm of contractor-dealers is capitalizing upon the interest of the public in the subject is a short article carried in *The Times-Picayune New Orleans States* on August 16. Part of this article is reprinted below.

"The average motorist aspires to own a new model, streamlined automobile if he does not own one. His reason for wanting this type of car is that it gives him better performance and that a new model car gives him "added prestige' as well. And so it is with the bathroom today. According to housing authorities, there is a very definite trend toward the new model bathroom fixtures, beautiful in design, most attractive in trimming and fittings, and gorgeous in color—a full range of colors to fit into any color scheme desired, in fact.

"Never before in the history of the 'at least one bathroom in every home' movement, dating many years back in America, has there been so much interest in modern bathroom fixtures. If you have only recently purchased a home, and there have been many sales reported in the last few weeks, or if you own the home you now live in, drop in at Gore and Daubert, Inc., 835 Baronne St., long established plumbing and heating firm, and let a member of the concern show you some of the new fixtures and quote you prices which are unusually low today because of the greater demand and resulting volume production.

"With these new fixtures, your bathroom could be the source of as much pride as any other room in your home. If it now contains fixtures that actually fit into the 'horse and buggy' age, then you always feel like apologizing for its appearance to your guests."


PHOENIX INDIAN SCHOOL PLUMBING SHOP
STATE BOARD OF HEALTH
BACK SIPHONAGE DOWN FEED PIPING INSTALLATION WITH SUPPLY VALVE OPEN
BACK SIPHONAGE WHEN SUPPLY VALVE IS CLOSED
BACK SIPHONAGE IN UP FEED PIPING INSTALLATION WITH SUPPLY VALVE OPEN
WATER MAIN
WATER MAIN



These pictures show the demonstration exhibits constructed by the Phoenix Indian School

Well Water

"Well Water Is Practical for Cooling Residences" was the title of an article by Norman Radder, secretary, Plumbing and Heating Industries Bureau, which appeared in a recent issue of *National Real Estate Journal*. Such an article as this carries the message of our industry to still another group and by a different medium, thus increasing the number of potential sales for the individual contractor-dealer.

"House cooling by means of well water has been found practical and inexpensive in many parts of the United States," the article began. "Obviously the efficient operation of a cooling system depends on the design and installation of the equipment and on the quality of the materials used.

"It is well for the home owner or home builder who wishes to investigate the subject of summer cooling to consult with a reputable and experienced contractor, preferably a man who has had considerable experience in the installation of cooling equipment and who can point to a number of installations which are functioning to the satisfaction of the owners."

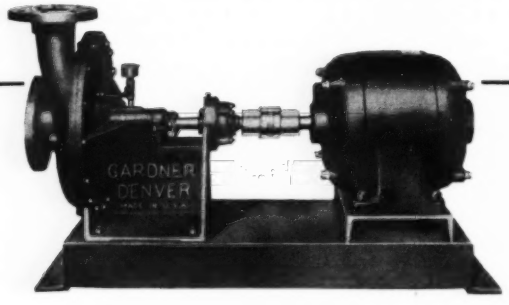
Mr. Radder also was author of an article on the same subject printed in the August issue of *Club Management*. Some of the points made in this article were: "With the possible exception of the theatre or the Pullman car, there is no place where a temperature differential of from ten to fifteen degrees with proportionate decrease in humidity would be more welcome on a hot summer day than the locker room of a country club. Indeed well water cooling is a "natural" for the country club, for two reasons: Most country clubs have a deep well with an unlimited supply of cold water. Every country club has need for large quantities of water for sprinkling and for the showers and pool. This solves the problem of what to do with the water after it has passed through the cooling coils."

Plumbing Exhibits

Showing that interest in good plumbing is not limited to any one territory or group is the fact that two plumbing exhibits have been constructed at the Phoenix Indian School, Phoenix, Arizona. Here then is another territory which will have available concrete, visual evidence of the health dangers of poor plumbing.

★ AT LAST ★

A Small Centrifugal That Really Gives You Something to Sell!



All too often, small centrifugal pumps are the "orphans" of a pump line. But not Gardner-Denver Side-Suction Centrifugals. For instance, these pumps are *adjustable to wear*—a feature that assures long, efficient life. They have "Oilite" radial bearings . . . heavy-duty ball-thrust bearings. They have "big pump" quality in every part. Every one is thoroughly tested in a modern laboratory before it leaves our plant. Yet Gardner-Denver Side-Suction Centrifugals are remarkably low in price!

Compare a Gardner-Denver small centrifugal with other pumps of its class and you'll know why Gardner-Denver is the pacemaker today. Complete information is yours for the asking.

★ Gardner-Denver Side-Suction Centrifugals are available in a complete line covering capacities up to 550 gallons per minute at heads up to 100 feet

GARDNER-DENVER COMPANY
102 Williamson Street Quincy, Illinois
Please send me the facts about your small centrifugal pumps.
Name .....
Company .....
Address .....
City ..... State .....

GARDNER-DENVER
PUMP BUILDERS SINCE 1859

One of the exhibits constructed is a demonstration of cross connections and back siphonage. Work on this was carried on in cooperation with the Arizona State Board of Health. This portable exhibit already has carried its message of proper plumbing before a convention of doctors in Nogales, Arizona, a public health convention in Tucson and an industrial exhibit in Tempe, Arizona. The other exhibit is a working model of cross connections and back siphonage.

It must be remembered that the effect of these, and similar, exhibits is a powerful selling argument for the reputable plumbing contractor-dealer. An old Chinese proverb states that one picture is worth a thousand words and so this visual proof of what can happen when plumbing is carelessly or improperly installed cannot help but increase the prestige of the reputable plumber and help him in his sales efforts.

Humanity and Humidity

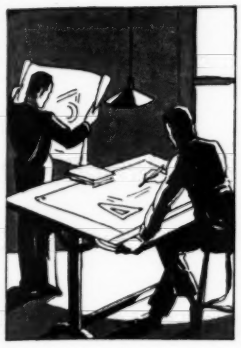
Bearing out the fact that air conditioning has a definite crowd appeal, a picture and a short article published in the August issue of *Buildings and Building Management* states: "The drawing power of air conditioning was demonstrated during a recent hot spell in Chicago when traffic through the air conditioned arcade of the new Field Building increased from a normal 20,000 persons between 8 a. m. and 5 p. m. to a daily average of 31,000. As a result of the increased traffic, shop owners on the arcade, which connects Clark and LaSalle Streets, reported a record summertime business."

A message such as this carrying concrete evidence of the sales value of air conditioning does much to advance its popularity and sale.

Something for Nothing

There is no catch in this offer of something for nothing. At the bottom of this column is a prepared news item which is ready to be copied on your company letterhead with your name and address filled in the proper blanks and then forwarded to your local newspaper. By doing this you will help publicize our industry and advertise your business. This plan works. One contractor-dealer secured a news item at the national association convention in Buffalo, took it back with him and had it published in his hometown paper with excellent sales results.

The ancient Romans appreciated the value of a pure water supply according to ————, plumbing and heating contractor-dealer of ————. In order to protect the city's water supply which was brought in by means of aqueducts, a capacious reservoir was constructed where the water was cleared by passing through several chambers and then distributed over the city. In many cases there were separate purifying and storing compartments for the different classes of structures to be supplied such as public fountains, baths and private homes.



Questions

Water Requirements... **Hot-House** **...Hydraulic Ram**

Water Requirements

- *Reader asks three questions on ratio of number of persons to shower, toilet and lavatory, and hot water requirement of shower*

To the Editor:

Can you give us information on the following questions? Our information along this line is rather meager and we would like to have some data from an authoritative source.

1. Ratio of the number of people to each shower, toilet and lavatory.

2. Comparison of the amounts of hot water used per average bather in a shower with a water-saver type head and in a regular bathtub.

3. Ratio in gallons capacity of hot water heaters to showers.

Indiana. M. H. W.

To the Reader:

The ordinary shower bath is supposed to accommodate between six and eight bathers per hour; one water-closet between 15 and 20 persons, one lavatory between 20 and 30 persons according to whether they all want to wash at the same time (or nearly the same time) or if the usage is distributed over long periods. In some cases such as work shops it may be necessary to make the ratio as low as 10 persons per lavatory.

The shower ordinarily is assumed to require a maximum of about 300 gal. of hot water per hour when it is in use to the greatest possible extent; that is, when another user is ready as soon as the previous user is out of the shower. Ordinarily the maximum *probable* use of hot water is taken at about ⅓ of the maximum *possible* use except in cases such as bath houses, school gymnasiums, etc., where a whole group will want showers as fast as they can be obtained. Fig. 1 shows the approximate water delivery for different types of the ordinary shower head; if the head you propose to use runs less than those quoted there will be a corresponding reduction in the amount of hot water used. The ordinary bath generally is assumed to require about 20 gal. per usage and to be capable of some four uses per hour; this makes the maximum possible demand for a bath tub 80 g.p.h. and usually the average demand is about ⅓ of this or 25 to 30 g.p.h. Against this is the fact that the tub will serve only about 4 persons per hr., whereas the shower will serve 6 to 8 persons in the same time.

The heating capacity required for showers greatly depends on the way they are used and the size of storage tank employed. For example, a shower used at the maximum for one hour and then not used for two hours would require about 300 gal. of hot water every three hours; the heater would only require a capacity of 100 g.p.h. if a tank with the other 200 gal. plus 25 per cent or 250 gal. were provided. Thus, with the tank hot at the start there would be available 200 gal. in the tank plus 100 gal. heated during the first hour which would give the 300 gal. required and leave 50 gal. in the tank to prevent the tank temperature falling too low toward the end of the period.

The same shower used at maximum for one hour and

Max. Possible Flow

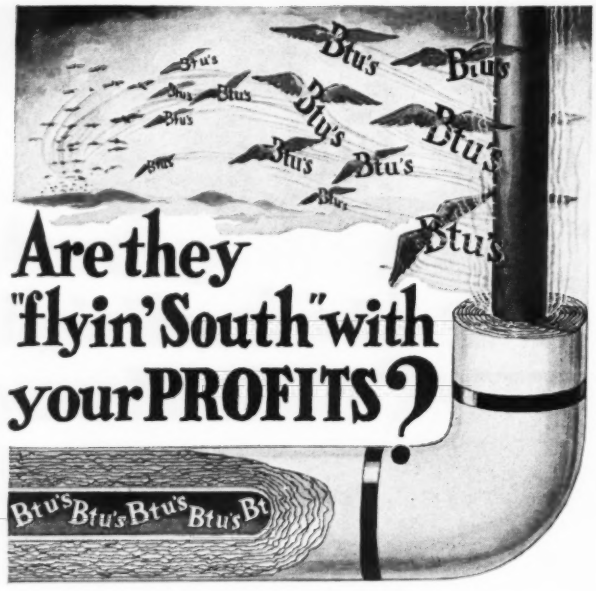
The maximum number of g.p.m. which a water pipe must supply depends on the number of fixtures, the types of fixture and the number of fixtures in use at one and the same time.

Maximum possible flow is the g.p.m. required *if all fixtures were in operation at the same time.*

The following is the average rate of flow for fixtures when supplied with water under ordinary pressure.

Fixture	*G.p.m.* C.W.	H.W.	*Fixture*	*G.p.m.* C.W.	H.W.
W.C.-F.V.	50	0	Lav.	3	3
W.C.-F.T.	18	0	Sh. 5"-6½" Hd.	3	3
U.-F.V.	40	0	Sh. Tubular	6	6
U.-F.T.	18	0	Sh. Needle	30	30
U. Auto. Tk.	1	0	Shampoo	1	1
U. per Ft. of Perf. Pipe	10	0	Liver. Spray	2	2
Laun. Tray	3	3	Manicure	1½	1½
Slop Sinks	4	4	Bath	5	5
Kitch. Sink	4	4	Sink-Pty.-Sm.	2	2
			Sink-Pty.-Lg.	4	4

Fig. 1



UNCONTROLLED Btu's, like birds, fly south, but unlike birds, are unseen.

Your knowledge of proper insulating equipment can waken home owners to their loss in fuel dollars, their loss in comfort, etc. With the Ruberoid-Watson line of insulating products, Btu's never fly south with your profits.

The market for Btu control in every community is rich. Every uncovered pipe, every uninsulated piece of heating equipment, offers your men real work, and you real money.

The Ruberoid-Watson line is complete. There are asbestos pipe coverings to meet various temperatures and pressures, asbestos block, board and paper specialties, plastic insulations, 85% magnesia, and mineral wool. Every job can be custom-built, regardless of the conditions that confront you.

The better type of jobber or dealer will be interested in the Ruberoid-Watson line, and the Ruberoid Sales Policy. Investigate. Mail the coupon for full facts.

Supercell—Temperature limit 500° F.—the newest development in the medium pressure field. 14-16 laminations to the inch. Pyroxylin finish or canvas jacketed.

The RUBEROID Co.
ROOFING AND BUILDING PRODUCTS

FREE INSULATING CATALOG

THE RUBEROID CO., DE-9
Insulation Division,
500 Fifth Ave., New York City.

Please send us your free Insulating Catalog and full facts about the Ruberoid-Watson Merchandising Plan.

NAME.....

ADDRESS.....

CITY.....STATE.....

then not used for the next hour, then used again for the third hour and so on, would require a heater of 150 g.p.h. and a tank of 150 gal. plus 25 per cent or 190 gal. This—with the tank hot at the start—will supply 150 gal. from the tank and 150 gal. from the heater, leaving 40 gal. in the tank at the end of the first hour. During the second hour the heater will heat 150 gal. more which, with the 40 retained in the tank, will be sufficient to reheat the tank ready for the third hour demand and a repetition of the cycle.

The same shower used at maximum constantly would have little use for a storage tank as the flow would be more or less constant and the heater would have to heat the whole 300 gal. every hour. Probably a 50 gal. tank would be used to allow for small inequalities in the hot water demand. With a greater number of showers the heating and storage tank capacities would simply have to be multiplied by the number of showers but the greater the number of showers the less would be the likelihood of their *all* being used to the maximum at the same time although such use might occur under certain conditions. In a dormitory such as our reader has in mind and so states in his letter, it is probable that his shower usage, at the peak, would seldom run over one hour and the average use probably would not be over ⅓ of the maximum which, if true, would suggest a heating capacity of about 100 g.p.h. and a storage tank of about 250 gal. per shower or a heating capacity of 50 g.p.h. and a storage tank capacity of 350 gal. per shower.

Air Conditioned Hennery

- *Btu. given off by hens is calculated; two air changes per hour are suggested*

TO THE EDITOR:

A customer of mine is planning to heat and air condition a hennery. He uses a battery system to take care of the hens. There are 600 hens housed in the building and 2,500 young stock on first floor. The building is two stories high, 25 ft. by 48 ft., has no basement and is of frame structure sheathed inside and out. Can you inform me as to the Btu. given off by a hen, and at the same time outline some pointers on heating and ventilating this building?

New York. R. O. F.

TO THE READER:

We have not been able to locate the information on the amount of heat given off by a hen and perhaps there is no test data on this subject as yet unless the Department of Agriculture in Washington has something. It would seem, however, that the Btu. should be somewhere in the neighborhood of 6 Btu. per hour and we arrive at this approximation by assuming that an average hen weighs about 3 lb. and an average man about 150 lb. These are only rough assumptions. Now a man in ordinary clothing gives off sensible heat to the extent of some 250 Btu. per hour and as the hen has a weight 1/50th that of the man it might be assumed that in proportion to the weight the hen would give off 1/50th as much heat or 5 Btu. per hr.

The amount of skin surface on a hen in comparison to its weight is considerably greater in proportion than in a man so the 5 Btu. might be increased to 10 or more Btu. Against this is the better insulation offered by the feathers which might offset the added surface exposed so as to bring the amount back to around 5 or 6 Btu. With 600 hens this would amount to

$$6 \text{ Btu.} \times 600 \text{ or } 3{,}600 \text{ Btu.}$$

which is equivalent to 24 sq. ft. of hot water surface, a comparatively negligible amount on the total required for the house. Smaller fowl will emit lesser amounts.

If hot water is used for heating this building, probably it will be best to run the pipes along the outside walls near the floor. An inclined board should be placed over them to keep droppings from falling on the pipes, and to prevent the roosting of fowls on the pipes.

As for the ventilation, one suggestion in the present case is to figure two air changes per hour for the building.

Hydraulic Rams

- *Reader asks how much lift a ram will give when installed under these conditions*

To the Editor:

If possible I would like to obtain some information in regard to hydraulic rams. The conditions are as follows: the drop from the spring to the point where the ram will be located is 10 ft. and the ram will be about 100 ft. from the spring. How many feet will the ram lift the water above the ram with this amount of drop? Is it necessary to install a stand pipe on the feed line from the spring to the ram? Is it possible to pump into a pressure storage tank with a ram and, if so, how should it be connected? Any information that you may be able to give me would be appreciated.

Pennsylvania. J. W. C.

To the Reader:

The water ram works on the principle that when a long column of water is set in motion and suddenly

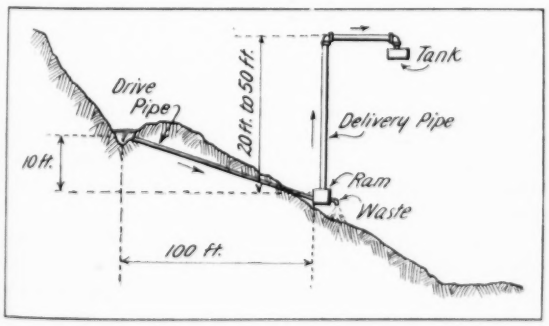


Fig. I

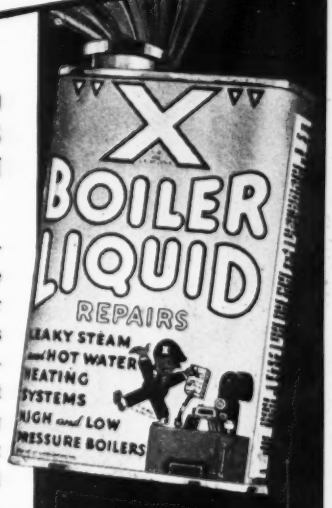
stopped a tremendous force is exerted by the impact as is evidenced in cases of the well known water hammer. With the water ram an outlet is provided from the ram through

PROFITS

Get those extra PROFITS in BOILER FLUSHING and LEAKPROOFING jobs with "X"

7 OUT OF EVERY 10 HOMES HAVE BOILERS THAT NEED ATTENTION NOW!

"X" BOILER LIQUID is indispensable to every profit-wise heating contractor, plumber and steamfitter, for it finds every leak and seals it quickly and permanently without shutting down or dismantling the heating plant. "X" has a record for performance and profit making that is unmatched in the industry. . . . It is used by the U. S. Government, was carried by Admiral Byrd on all his Polar Expeditions, and its many famous industrial users throughout the world on land, at sea and in the air reflect its positive performance.



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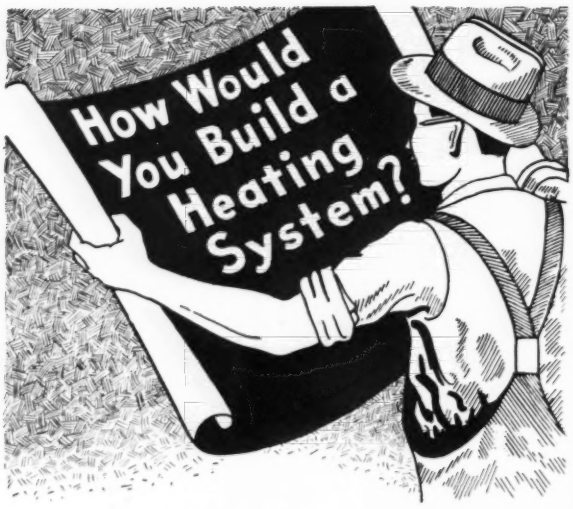
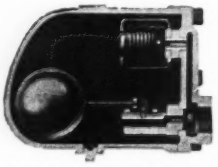
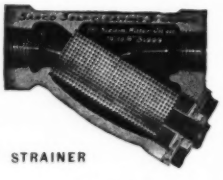


If you were building a heating system for yourself, wouldn't you build it so you could feel certain that it would keep your building as warm as desired in any weather and be on the job for years without repairs?

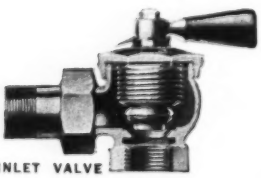

FLOAT and THERMOSTATIC TRAP

You wouldn't say "I'm going to make a heating system to cost exactly so much." You would spend as much as necessary to insure proper heating and low fuel consumption and eliminate repairs.

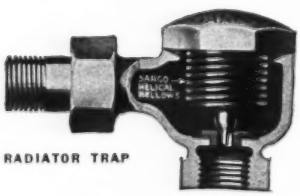

STRAINER

SARCO HEATING SYSTEM

was built as you would have built it yourself. How did the men who designed and built the Sarco know what kind of a heating system would give the greatest satisfaction? They knew because they took great pains to find out before it was designed.


INLET VALVE

They knew because many of the men who designed and built Sarco Heating Systems have specialized in this line for a quarter of a century. In addition, their experience has been constantly supplemented by the experience of many of the foremost engineers and mechanics in America.



RADIATOR TRAP

Write for our Catalog M-45.

SARCO COMPANY, Inc.
183 Madison Ave. New York, N. Y.
Branches in Principal Cities
SARCO CANADA LIMITED, Federal Building, Toronto, Ontario, Canada

a check valve opening into the pipe into which the water is to be delivered. This provides an escape for the water when the flow to waste is suddenly stopped and it is driven out of the ram at high pressure, the pressure depending on

a. The length of the water column in the drive pipe.
b. The drop in the drive pipe which is the force which sets the column of water in motion.

A sketch of a typical installation is shown in Fig. 1.

In the ordinary installation usually it is customary to have the fall anywhere from ½ to ⅕ of the elevation to which the water is to be raised by the ram and the length of the drive pipe should be 5 to 10 times the amount of fall to obtain sufficient driving force and length of water column. Applying this to the conditions of the problem as presented by the reader it will be seen that with his drop of 10 ft. and a drive pipe length of 100 ft. his drive pipe is ten times the drop so that he has a good ratio and should be able to elevate water anywhere from 20 ft. to 50 ft. above the level of the ram. The greater the amount of lift the smaller will be the quantity of water delivered and the greater will be the amount wasted in operating the ram.

We see no reason to use a stand pipe on the drive pipe because if this is attached anywhere near the ram it will spoil the ram action by allowing the column of water to drive up into the standpipe instead of into the delivery pipe. Neither do we see any reason a ram would not deliver into a pressure storage tank provided the tank pressure is not too great for the ram to work against. In this case, if the ram would deliver water at an elevation 20 to 50 ft. above the ram level, it would be equivalent to delivering water against a tank pressure of 8 to 20 lb. It is doubtful if this is sufficient pressure to satisfy the reader, but if the ram is to deliver against a higher tank pressure more drop will have to be obtained. In any event the reader should obtain deliveries and pressures against which the ram he intends to use will operate as all rams are not of the same design.

Hot House Heating

• *Automatic oil heating system specified; much heat required by glass construction*

To the Editor:

I have a problem in finding a way to heat a very small hot house in which there is no way to make a connection to the heating plant in the home and since the hot house is so small there is little place in it to install heating equipment. The customer specifies oil for heating. It must be fully automatic, equipped with a bell in the home which will ring in case of insufficient heat and the temperature is to be the average greenhouse temperature.

I am enclosing a sketch of the hot house, Fig. 1, and I would appreciate very much your advising me in this matter and telling me how many Btu. or square feet of radiation will be required.

Virginia. M. E. T.

To the Reader:

A hot house requires a great deal of heat, comparatively, owing to the great amount of glass used in its

construction and the constant temperature day and night which usually is carried. A calculation of the approximate requirements of your building shows that with zero outside, about 40,000 Btu. are required and this may be changed to the Btu. loss for any other outside

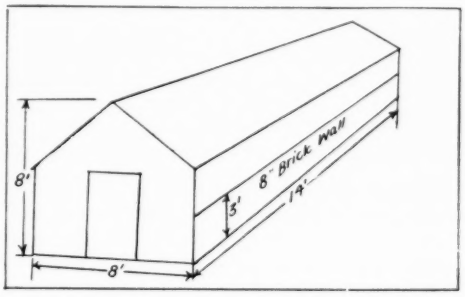


Fig. 1

temperature by dividing by 70 and multiplying by the number of degrees that the real outside temperature is below 70 deg. Fahr. Thus if your outside temperature were only 35 deg. Fahr. then the Btu. loss would approximate

(40,000 Btu./70) × 35 or 20,000 Btu.

One solution to your problem would be in building a small cellar either under the floor of the greenhouse or just outside, and installing an oil burning hot water boiler in this space below the level of the hot water pipes which usually are run under the beds along the side of

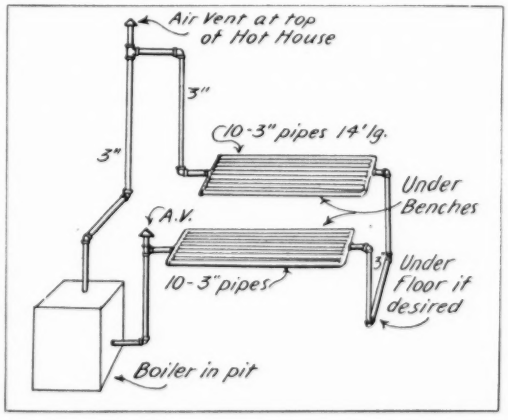


Fig. 2

the building. These hot water pipes are made up in the form of coils and for zero outside there would be required for this building about 291 ft. of 3 in. pipe, or 10 pipes on each side with the two coils approximately 14 ft. long.

The arrangement of piping could be somewhat as shown in Fig. 2, with the cross connection between the two coils dropped under the floor if it is found to be necessary.

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☆HERE is a brand new kitchen sink which is destined to win the heart of *every* woman.

This ultra-modern COMPACT Sink and Cabinet now makes it possible to place virtually every kitchen necessity within easy reach of the housewife. It's just what women have wanted *for years.*

The WAKEFIELD cuts their kitchen labor *to a minimum* and gives them a new freedom they've never known before.

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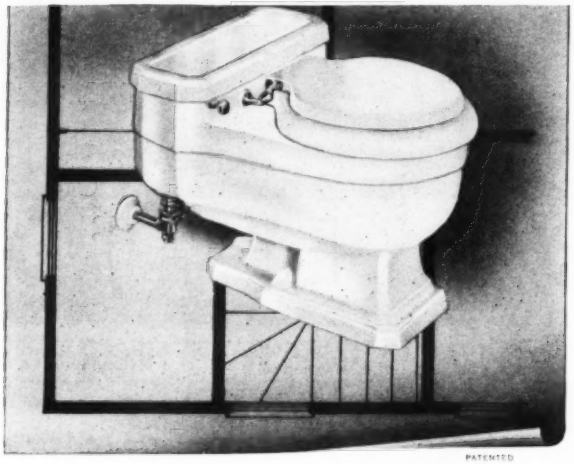
When you stop to figure
YOU'LL WANT TO INCLUDE THE
T/N *in your bathroom plans*



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PATENTS PENDING

● **When the figuring is done, an ever increasing number of bathroom specifications include the T/N one-piece water closet. With good reason, too, for client satisfaction is registered highest with the T/N . . . and hundreds of thousands of prospective home owners have been made familiar with T/N features through advertising in leading publications. Because the T/N needs no wall for attaching, and can be placed in a corner or even beneath a window, an infinite variety of bathroom layouts is possible. And the T/N design conforms to all modern bathroom fixture trends. Its strong but quiet flushing is an important advantage, along with the non-overflow feature, atmospherically vented to prevent water supply, contamination, and the great variety of available colors. Priced so you can include the T/N in the most modest home plans.**

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Questions For READERS

The following reader's question was published in July. An answer which has been selected for publication follows.

A cooling installation will require the use of three 1-ton units and one 5-ton unit, the cooling elements of which will be supplied with refrigerated water having a 15 degree drop through the unit. How much water in g.p.m. must be circulated and what will be the approximate amount of refrigeration load on the water cooler?

If the water drops 15 degrees in passing through the units, each pound of water circulated will pick up 15 Btu. as a pound of water requires one Btu. to raise it one degree and 15 Btu. to raise it 15 degrees. A ton of refrigeration is equivalent to 200 Btu. per minute or 12,000 Btu. per hour. It is necessary to circulate enough water to pick up all of the Btu. which the units are to remove and, in the case set up, this amounts to

three 1-ton units or.....3 tons
one 5-ton unit or.....5 tons

Total .....8 tons

which, in Btu., amounts to

8 tons × 200 Btu. or 1,600 Btu. per minute.

The number of pounds of water to be circulated per minute then amounts to

1,600/15 Btu. or 107 lb. per minute

which, reduced to gallons by dividing by 8⅓, since there are 8⅓ lb. of water to a gallon, becomes

107 lb./8⅓ lb. or 13 g.p.m.

The load on the water cooler will be slightly more than the refrigeration handled by the units as the line loss also must be supplied by the cooler; in an actual installation this would be calculated from the length and size of the piping involved but, for the purpose of answering this problem and to illustrate the method, it simply will be assumed that the line losses approximate 25 per cent or

1,600 Btu. x 0.25, which is 400 Btu. per minute

which, added to the original unit refrigeration load, results in

unit load .....1,600 Btu. per minute
piping, 25 per cent..... 400 Btu. per minute

total .....2,000 Btu. per minute

In tons of refrigeration, 2,000 Btu. per minute would be equivalent to a tonnage of

2,000 Btu./200 Btu. or 10 tons.

If the circulation lines are well insulated and the runs are not excessively long it is probable that the calculated pipe losses would result in less than 25 per cent of the total. Consequently, the use of 25 per cent in this case is not necessarily to be taken as an average figure because the circulation lines may vary to a considerable extent when one installation is compared with another.

How Would You Answer This Question?

What are the three main factors which determine the intensity of chimney draft?

Answers based upon your experience, suitable, will be paid for and published in the November issue.

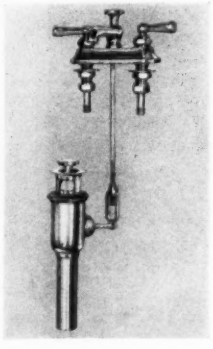
PRODUCTS *for* DEALERS

New Lavatory Fixture

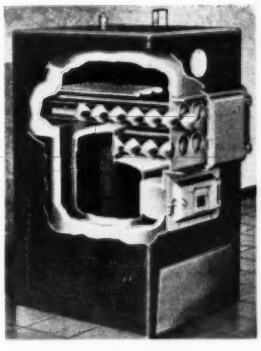
The lavatory fixture shown in the accompanying illustration has been put on the market just recently.

It is of the centerset type, and has a pop-up style waste outlet. A description indicates that it is made of brass and finished in chromium, and is available in two sizes, 4 in. center to center with a 3 in. nozzle, and 4 in. center to center with a 4 in. nozzle.

Speakman Company, Riverview Works, Wilmington, Del., is the manufacturer of this new lavatory fixture.



New Lavatory Fixture Just Introduced



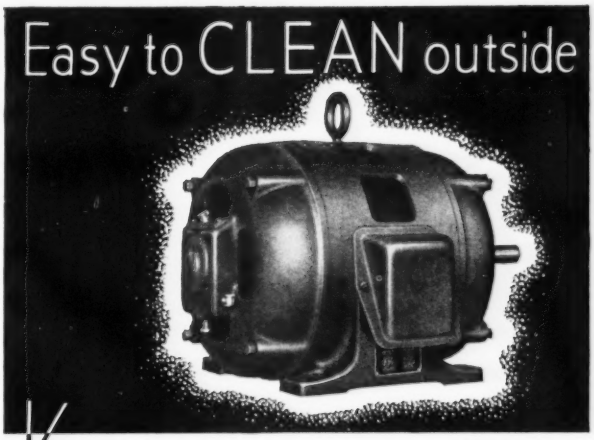
Oil Heating Vertical Boiler Recently Announced

Oil Heating Vertical Boiler

A new vertical steel boiler designed for oil firing has been announced, and is shown in the accompanying illustration. Two sizes are available.

The boiler is made in 23 and 26 in. diameters, and has steam ratings of 540 and 680 sq. ft., and hot water ratings of 860 and 1090 sq. ft., respectively. Equipment listed as standard for the boilers includes built-in coils for providing domestic hot water; a low water cut-off and an observation port; an automatic draft adjuster; and aquastat tappings. The boiler is provided with insulation with the idea of reducing heat loss and muffling burner noises. A feature listed for the boiler construction is that gases from the vertical combustion chamber pass through a series of short tubes to a front chamber and then through a longer series of tubes to the smokebox, with devices in each tube to give the gases a swirling motion, and to increase the scrubbing effect. The units are enclosed in either what is termed a standard jacket, for rotary burners, or a front extension jacket which is designed to enclose gun type burners and controls. Baked gray enamel and aluminum trim is the finish on the jackets.

National Radiator Corp., 221 Central Ave., Johnstown, Pa., is the manufacturer of the new oil burning boiler.



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Century Polyphase Motors keep themselves clean inside in the presence of dust that will not harden with heat nor solidify with high humidity...They are easy to keep clean outside ...They start quietly—run quietly—and are remarkably free from vibration.

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SIZES UP TO 600 HORSE POWER

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WATER HEATERS

A newly designed line of indirect Water Heaters in 24 sizes, having tank capacities from 30 to 600 gals. Extra heavy cast iron shell, heavy copper coil and with all capacities conservatively rated. Ample boiler, coil and aquastat openings. Brass connections to copper coil prevents domestic water from coming in contact with iron in "Sure Hot" Heaters. Clean water is assured. Furnished with or without unions.

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KWIK-KOILS

Gets radiators hot quicker. A copper coil set in the fire box. Takes water from bottom of boiler—heats it and returns it to the top.

FLOOR-CEILING PLATES

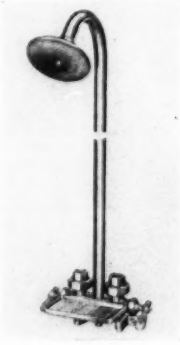
Sizes 3/8" to 4" Two types — with latch and hinge also "Sure Grip" prongs.

New Double Shower Fixture

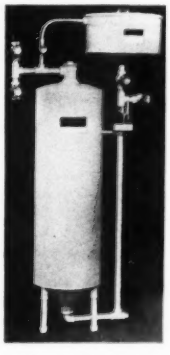
The shower fixture shown in the accompanying illustration has just been announced.

It consists of a shower valve, shower head, and a galvanized goose neck, which measures 24 in. from valve to head connection. The valve is equipped with two outlets, permitting installation with supply pipes from either the floor or ceiling, the plug being placed in the unused outlet. The shower head face is of cast brass, secured by a single screw to permit its removal for cleaning. Wall brackets and a removable soap dish are listed as being standard equipment. The ground joint union inlets are ½ in., and the outlets are threaded, ½ in. in size. The shower fixture is finished in rough nickel plate.

H. B. Sherman Manufacturing Co., 22 Barney St., Battle Creek, Mich., manufactures this new shower fixture.



New Double Shower Fixture



Water Softener Just Announced

New Water Softener

A new mineral water softener, which has just been introduced on the market, is shown in the illustration here.

The device incorporates what is known as a circulating salt saturator which is designed to permit regeneration of the water softening material in a short time. In the attachment listed as a salt saturator, common salt is dissolved in a measured quantity of water, and when recharging is necessary, by closing the hard water inlet and soft water outlet valves and opening the saturator valve and the washout valve, the salt solution runs into the body of the softener, driving before it any water left in the softener. Then hard water is permitted to run through the softener and out the drain, to wash out the salt water. A soap test is used to determine whether the water softener is functioning properly. It is indicated that the softener is made in various sizes and capacities, the water softening capacity and the length of time the softening material remains effective being dependent upon the degree of hardness of the water.

The J. H. Nash Manufacturing Company, 35 S. St. Clair St., Dayton, O., is the manufacturer of this new water softener.

Here is news of selected products designed to open up new and increasing markets for dealers

Cleanable Filter Panels

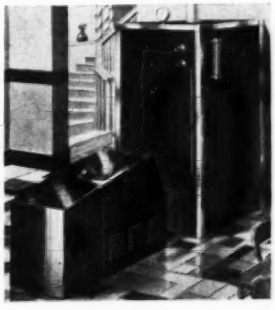
A filter panel designed to be applied to the air intake ducts of air conditioning installations for the purpose of removing dust and grit from the air and for preventing their entering the system is illustrated below.

The panel consists of a frame containing the filtering medium, which is of galvanized wire screens of various meshes crimped to create progressive density. Some of the features listed for this filter are: the panels are easily cleaned; the filter medium cannot be shaken loose from the 16 gauge steel frame; dust is impinged evenly on both the plane area and progressively through the filter, resulting in large dust holding capacity; uniform density, with the boiler which is designed and built with the resistance to the air current. The recommended capacity is 2 to 2½ c.f.m. per sq. in. The sizes listed as standard are 2 in. and 4 in. thick in any lengths and widths up to 27 in. by 36 in. Cleaning is accomplished by soaking the filter in a pan of light oil and draining off the excess.

Air Maze Corporation, 812 Huron Rd., Cleveland, Ohio, manufactures this filter.

Cleanable Filter Panels

Coal Stoker and Boiler Unit



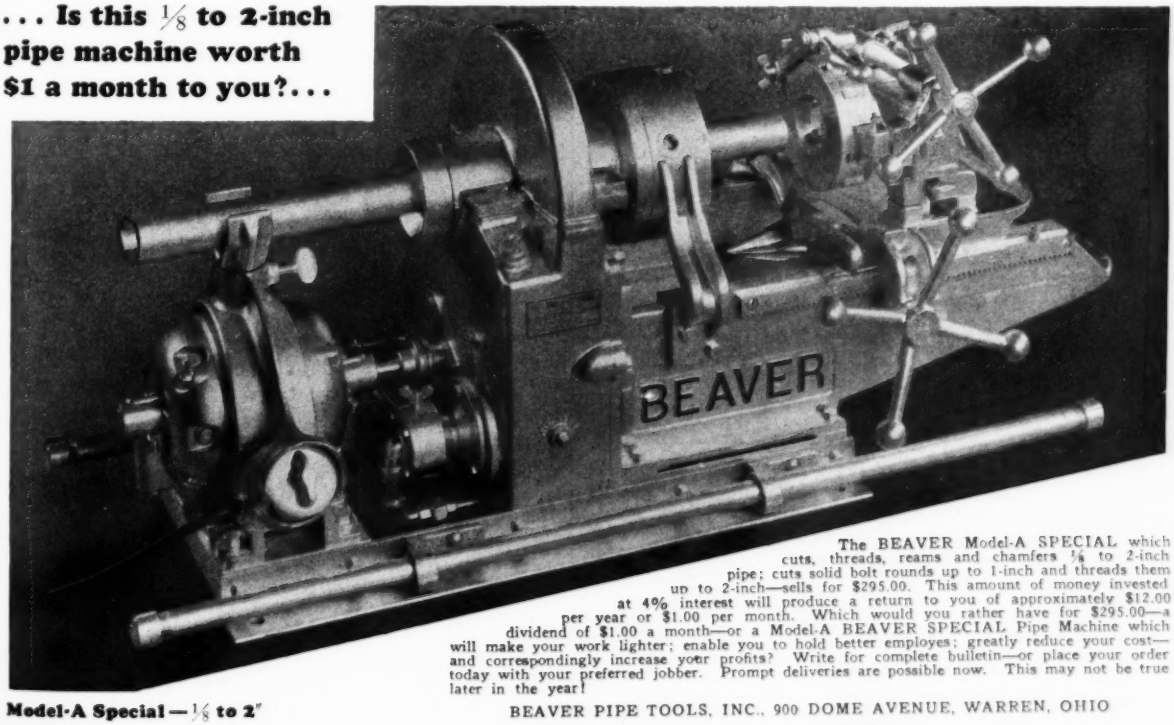
Coal Stoker and Boiler Unit

The automatic coal stoker and boiler unit shown in the accompanying illustration has been announced recently.

The unit is designed to be installed in combination with the boiler which is designed and built with the requirements of automatic coal firing in mind. The complete unit is finished in bright red and black, and all working parts are enclosed in this casing.

The stoker used in this unit is manufactured by Anchor Stove and Range Co., and the boiler is a product of the American Radiator Company, and the assembled unit is distributed by the former company, which is located in New Albany, Ind.

. . . Is this ⅛ to 2-inch pipe machine worth $1 a month to you?. . .



The BEAVER Model-A SPECIAL which cuts, threads, reams and chamfers ⅛ to 2-inch pipe; cuts solid bolt rounds up to 1-inch and threads them up to 2-inch—sells for $295.00. This amount of money invested at 4% interest will produce a return to you of approximately $12.00 per year or $1.00 per month. Which would you rather have for $295.00—a dividend of $1.00 a month—or a Model-A BEAVER SPECIAL Pipe Machine which will make your work lighter; enable you to hold better employes; greatly reduce your cost—and correspondingly increase your profits? Write for complete bulletin—or place your order today with your preferred jobber. Prompt deliveries are possible now. This may not be true later in the year!

Model-A Special—⅛ to 2"

BEAVER PIPE TOOLS, INC., 900 DOME AVENUE, WARREN, OHIO

BEAVER PIPE TOOLS

CUT MORE PIPE

With This RIDGID Thin Blade Cutter Wheel of Super-Steel

● RIDGID Pipe Cutters give you more quick, clean cuts because of their remarkable thin blade cutter wheel. Not cut out of bar stock but coined from special tool steel, hammered, heat-treated and cast into a hub with a steel bearing, these blades have extraordinary stamina and clean cutting ability. Kept running true by the reinforced cutter housing, they save your money and your temper by nipping off far more pipe per blade and doing it cleanly, practically without burr. Ask your jobber.

THE RIDGE TOOL CO., ELYRIA, O.

RIDGID

Reg. U. S. Pat. Off.

No. 1 1/8" to 1¼"
No. 2 1/8" to 2 "
No. 3 1 " to 3 "
No. 4 1 " to 4 "

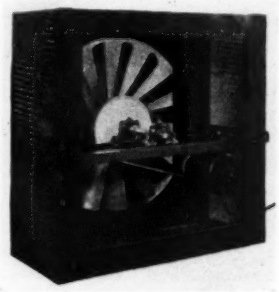
● The immense popularity of the RIDGID Pipe Wrench is due to the facts of its great strength, its almost indestructibility and the pleasant satisfaction of using it.

New Pipe Joint Seal

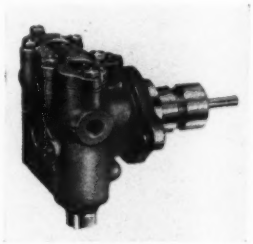
A new pipe joint compound has been placed on the market just recently.

A description indicates that the compound possesses lubricating, filing, and grinding properties, and in addition, it is non-hardening, permitting joints sealed with it to be broken because of the elasticity of the compound. It is designed to be applied to male threads of screw joints in steam, hot water, gas and air piping systems in which pressure is maintained. It is indicated further that the compound may be used as a preservative dressing for flanges or joint packings.

This new pipe joint seal is manufactured by National Boiler Improvement Co., 4100 Georgia Avenue, Washington, D. C.



Night Air Cooling Unit



New Fuel Oil Unit

Night Air Cooling Unit

The attic ventilator shown above is designed to exhaust the heated air which has accumulated in the upper part of the building during the day.

The unit is listed as consisting of a 24 in. fan assembly driven by a motor having an automatic belt tension device. An adjustable pitch motor pulley is designed to permit selection of fan speeds between 350 and 550 r.p.m. to produce an air discharge of from 3500 to 5500 c.f.m. The motor and fan are described as being encased in a protective housing which is made to be suspended from the roof beams by coil springs. These springs are provided to prevent transmission of torque and to assure quietness. The unit is designed to be installed to discharge air either through a window or through a hole cut in the wall.

This ventilator is manufactured by the Peerless Electric Co. of Warren, Ohio.

New Fuel Oil Unit

The fuel oil unit for use with domestic oil burner installations shown above, at the right, has just been placed on the market.

The unit is listed as consisting of a pump, a regulating valve and a strainer, and as being equipped with either of two size pumps, 18 gal. or 28 gal. A bracket for foot mounting is listed as optional equipment. The unit is available with the burner port on either side. The

strainer is designed to be of ample size for a capacity of about 7½ g.p.h. and the pump is described as being quiet in operation.

Monarch Manufacturing Works, Inc., Salmon and Westmoreland Sts., Philadelphia, Pa., is the manufacturer of this new fuel oil unit.

Water Type Unit Cooler

A water type unit cooler, which is designed to absorb heat and reduce humidity in the air in a room, using tap or well water that is sufficiently cold, water precooled by ice or mechanical refrigeration, alcohol, glycerine or non-corrosive brine as the cooling medium has just been announced, and is shown below at the right.

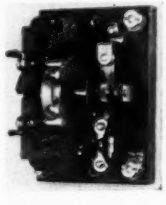
The unit is listed as being available in four capacities ranging from 14,090 to 61,400 Btu. Equipped with a motor and fan to provide circulation of room air, the unit thus is intended to be suspended in such a way as to provide 360 degree rotatability, thus permitting directing the air stream. Among the features listed for the unit are vertical fins, an insulated drain tank and provisions for converting the unit for heating if it is desired, employing either high or low pressure steam as the heating medium.

Modine Manufacturing Co., Racine, Wis., manufactures this cooling unit.

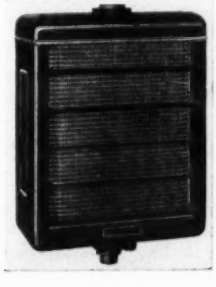
Motor Operated Timing Devices

The motor operated timer shown below is one of a line which has been introduced on the market just recently.

One of these timers is of what is called the immediate recycling type, operating in such a manner that when the



Above, motor operated timer

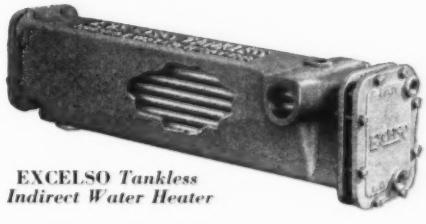


Right, Water Type Unit Cooler

first impulses are received, the motor starts and energizes a solenoid. The solenoid operates a clutch connecting the motor with the series of cams. At the end of the cycle the motor is de-energized by a contact point on one of the cams, and the motor and cams are returned to their original position, ready for the next impulse. It is indicated that the timing is adjustable over a wide range, and that the timer is available in sizes to meet a wide variety of load contacts. Another of these timers is of the continuously rotating type, in which gears cause the cams of the timer to rotate in the

EXCELSO PRODUCTS

We're certainly uncovering a lot of New Business with EXCELSO Tankless Heaters



EXCELSO *Tankless Indirect Water Heater*

IT'S the money on the barrel head that is getting dealers steamed up on this new EXCELSO Indirect Heater. It opens up new installation possibilities on all types of automatically fired heating boilers by eliminating the storage tank.

The EXCELSO Tankless Water Heater incorporates in its construction the quality features of the famous line of EXCELSO Indirect Water Heaters. Easily removable copper tube heating element to facilitate inspection and cleaning—all copper and brass waterways, giving forth clean hot water supply. Uses full ¾" copper tubing—provides for true counter current circulation of both boiler and domestic water. Insulated, enamel-finished jackets optional equipment at small extra cost. 180-gal. and 240-gal. capacities.

If you haven't complete specifications and sales literature on these Tankless Heaters—write today.

EXCELSO PRODUCTS CORPORATION
57 Clyde Ave. Buffalo, N. Y.

Canadian Representatives:
Railway & Engineering Specialties, Ltd.
Montreal Toronto Winnipeg

EXCELSO PRODUCTS CORPORATION
57 Clyde Ave., Buffalo, N. Y.

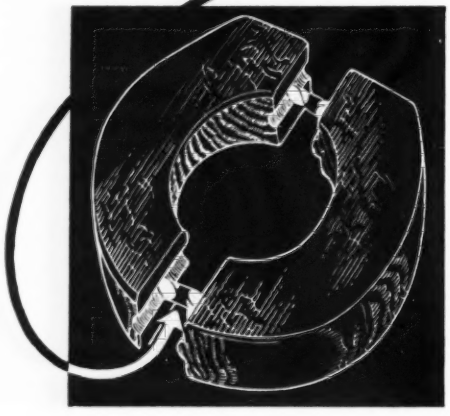
We can use some extra profits. Send us that Excelso Tankless Heater's construction features with prices and specifications.

FIRM .....

ADDRESS .....

BY .....

One GOOD Patented Feature* is worth a whole basketful of gadgets



CONSTRUCTION MODEL FREE!

*Never-Split

HIDDEN-STEEL SCREW

(Patented)

You can sell Never-Split seats against competition because Never-Split offers outstanding advantages in its HIDDEN STEEL SCREW construction. You can tell your prospects that Never-Split seats will NEVER SPLIT or pull apart, and you can show them why in a very convincing demonstration of the Never-Split construction model. This one patented feature is worth a whole basketful of gadgets . . . because it gives you something definite to talk about, and it builds confidence in your judgment that will lead to many a complete plumbing job.

LEADERS FOR THIRTY-TWO YEARS

When you stock and sell Never-Split wood seats or Evernu Hard Rubber seats you have the satisfaction of knowing that there is no better selection for the money on the market today. Superior quality in every detail, backed by thirty-two years' experience in seat manufacture, gives you something to talk about when competing for new business in residences, apartments, hotels, office buildings, schools and all other remodeling or new construction jobs.

Sell NEVER-SPLIT SPRAYED, VARNISHED, AND SHEET-COVERED SEATS

and EVERNU HARD RUBBER SEATS

for Longest Profit!

The Never-Split Seat Company has always sold its products only to recognized Wholesalers of Plumbing Supplies who confine their sales to Plumbing Contractors of good standing. Write today for free advertising materials and a Never-Split Construction model. Ask for Catalog "K."

NEVER-SPLIT SEAT CO., Evansville, Indiana

desired speed. This unit is listed as being available in both adjustable and not adjustable types.

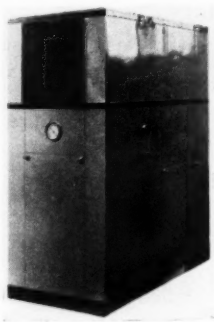
Struthers Dunn, Inc., 139 N. Juniper St., Philadelphia, Pa., is the manufacturer of these new timers.

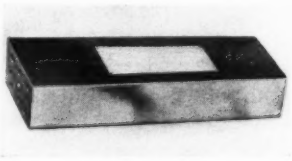
Oil Burning Air Conditioner

The air conditioning unit shown in the accompanying illustration has just been announced.

It is designed to supply heat, domestic hot water and winter air conditioning, and is described as being adaptable to the split system. The welded horizontal tube copper-steel boiler is listed as being equipped for steam, vapor or hot water service, and as containing a built-in tankless type water heater. Features listed for the unit are: the boiler has a low water line; the unit is automatically controlled; and the jacket is insulated. The capacities listed for the boiler are, for hot water radiation, 420 and 720 sq. ft. and for steam radiation, 500 and 860 sq. ft.

International Engineering Works, Inc., Box 71, Waverly St., Framington, Mass., is the manufacturer of this winter air conditioning unit.





Above, Boiler Scale Remover

Left, Oil Burning Air Conditioner

Boiler Scale Remover

Shown above is a boiler scale remover which has been placed on the market just recently.

It is described as functioning on the principle of creating an electrolytic action within the boiler which produces corrosion that destroys boiler scale without damaging the boiler plates or tubes. It is designed for use in boilers with capacities up to 100 h.p., and it is indicated that in larger boilers, more than one unit may be used. The unit measures 6 in. wide by 3½ in. deep by 18 in. long, and has a copper finish. The scale remover is designed to be placed inside the boiler on the boiler tubes.

Oneida Electric Mfg., Co., Green Bay, Wis., manufactures this boiler scale remover.

New Filter Unit

The filter shown on the following page, which is listed as being replaceable, has been announced just recently.

The filter element is made up of two parts, the frame and the filter, which is composed of two serrated sec-

tions which support the actual filtering material in deep pleats to provide maximum filtering area and to seal the saw-tooth edges against air leakage. It is indicated that the filtering material is supplied in rolls and is applied to the filter frame by either a manually or mechanically operated loader, each roll containing sufficient material for fifteen units. The unit is made in one size which measures 24 in. square by 8 5/16 in. deep, and is rated at 1,000 c.f.m.

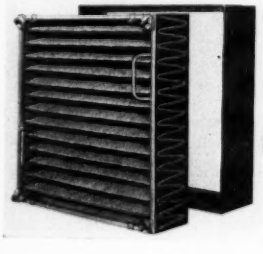
This filter is manufactured by the American Air Filter Co., Inc., 220 Central Ave., Louisville, Ky.

New Gas Kitchen Ranges

The modern design gas kitchen range shown below has been placed on the market just recently.

It is one of six models, parts for which are listed as being interchangeable. The base is of welded channel steel, with the front and back frame sections being stamped from one piece with the idea of making the construction sturdy and rigid. Among the features listed for the new gas ranges are: the burners are centrally located to provide utility space on both sides; interchangeable cooking inserts, made of cast iron, are vented to a height of 3/8 in. to provide ample escape; the burners are designed with a large flange which is described as directing the secondary air flow to mix with the flame at the proper angle; an automatic lighter ignites the gas as soon as the valve is opened; and bulb type heat controls, employing chlorinated diaphenol as the control medium, simplify temperature adjustment.

Detroit Vapor Stove Company, Detroit, Mich., is the manufacturer of these new gas kitchen ranges.



New Filter Unit Just Announced

New Gas Kitchen Ranges

Oil Fired Water Heater

The automatic oil fired water heater shown on the next page, at the left, has been placed on the market just recently.

It is designed to provide a constant supply of hot water through the year, particularly when a large supply of water is needed. The heater is made in three capacities, ranging from 60 to 300 gal. Among the features listed for the heaters are: all parts are made of cast iron except the fire ring, which is of a chrome alloy; the drillings and tappings are of standard size and thread; the motor blowers are designed for continuous operation, and are powered by a motor of either of six voltages; the

20% to 25% greater tensile strength and elongation are offered by Jarecki Air-Furnace Malleable Iron Fittings than by ordinary cupola-melted malleable fittings. Jarecki Cast-Iron Fittings offer a similar degree of extra dependability.

Write for Catalog.

Jarecki
MANUFACTURING COMPANY
ERIE, PA., U. S. A.

DOUBLE STRENGTH
EXTRA LENGTH

The new Trimo Alloy Pipe wrench is made of Chrome Molybdenum Nickel Alloy Steel, its drop forged steel construction giving double strength — double margin of safety.

Buy Trimo — always available to help you save money on pipe wrench work.

HAVE YOU USED THE NEW TRIMO SAWING VISE SET?

• The first tool to do a perfect job of holding, cutting and sizing thin wall copper tubing, plumber's brass and plated tubing. Order a set from your jobber and see how the Sawing Vise Set takes all the grief out of a thin wall tubing job. You'll find that the Sawing Vise Set pays for itself on its first job.

TRIMONT MFG. CO., INC.
ROXBURY (BOSTON), MASS.

heater is lighted manually; oil meter valves, fan, motor and other controls are outside the heater, with no moving parts inside; the motor is of the closed case type; and the burner is designed to burn what is termed ordinary furnace oil.

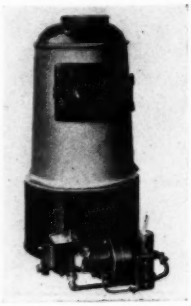
This water heater is manufactured by The Michigan Burner Company, 1055 W. Baltimore Ave., Detroit, Mich.

New Automatic Coal Stoker

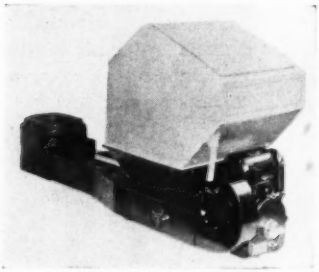
The automatic coal stoker illustrated below is one of a line which has been put on the market just recently.

It is designed for use with anthracite or bituminous coal, as specified, and is of the underfeed, single retort type. The features listed for this stoker are: a ratchet type feed; a shear pin designed to protect the mechanism from damage from overload; an automatic fire banking damper; a fume eliminator; sectional tuyeres made of a heat resisting alloy; a one-piece cast steel conveyor screw; steel coal hopper and air duct; and automatic electric controls. It is indicated that all working parts operate in an oil bath, and also that an electrically driven fan supplies forced draft to the fire bed.

These stokers are manufactured by The Frederick Iron & Steel Company, E. 7th and East Sts., Frederick, Md.



Oil Fired Heater



New Automatic Coal Stoker
For Anthracite or Bituminous Coal

New Air Conditioning Unit

A unit air conditioner has been announced recently.

It is designed to cool, dehumidify, ventilate and filter the air in an average sized room, and has a capacity of 5,500 Btu. per hour. The unit is described as being equipped with three small hermetically sealed refrigerating machines to do the cooling. This equipment is used with the idea of permitting quiet operation. The three cooler units are started automatically, one after another, and are listed as permitting plugging the machine in a standard 110 volt outlet without any special wiring. A telescopic duct is designed to be installed in a partly opened window to provide fresh air for ventilation, as well as a supply of air for cooling the condensers and removing heat and moisture which have been taken from the room air by the cooling units. The air conditioning unit is described as being enclosed in a steel reinforced walnut veneer cabinet of modern design.

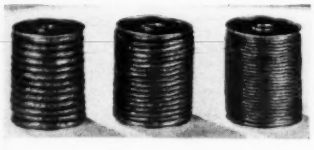
This equipment is manufactured by General Electric Co., Bloomfield, N. J.

Anti-Frictional Plastic Packing

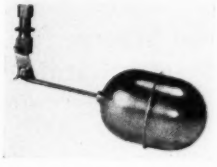
The plastic packing shown in the accompanying illustration has been put on the market just recently.

It is designed to form a permanent anti-frictional seal, which, it is indicated, does not tend to harden or dry out, is resilient, and flows readily under gland pressure. A description indicates that the packing is made up of fine particles of a new alloy, a high temperature binder, long fiber asbestos and flake graphite, and is processed for even distribution and resistance to high temperatures. It is listed as being marketed in bulk and in the following special forms: valve stem, spiral, coil, ring and endless.

This plastic packing is manufactured by Crane Packing Company, 1800 Cuyler Ave., Chicago.



Anti-Frictional Plastic Packing Just Introduced



New Valve and Float Assembly

New Valve and Float Assembly

The new valve and float assembly shown here has been announced just recently.

It is designed for application to tanks or pans containing liquids, with its usual use being controlling the flow of water to evaporating pans. Capacity is listed as five gallons of water per hour on 50 to 60 lb. per sq. in. pressure, but it is indicated that the capacity may be increased by enlarging the drilling of the valve body. Red brass containing a high percentage of copper is listed as being used in the construction of the assembly, some of the features of which are: a short, straight float rod; die-formed solderless floats; and a one piece, square, free-floating plunger with a self-cleaning pressure reducing pilot. It is manufactured in one size, having the inlet arranged for either ¼ in. copper tubing or ⅛ in. iron pipe.

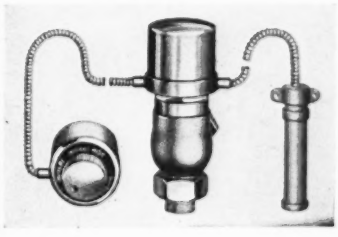
Humidity Headquarters, 1893 East 55th St., Cleveland, Ohio, is the manufacturer of this new valve and float assembly.

New Information and Aids to Sales

Heating Boiler Bulletin

Union Iron Works, 1500 Cascade St., Erie, Pa., has issued a four-page, two-color bulletin on their line of heating boilers. A discussion which covers design, construction, installation, equipment and sizes; photographs

● Answer your Temperature Control Problems with this coupon



Remote Control THERMOTROL

Type illustrated is furnished for installation with valve in vertical or horizontal position—ideal where radiators are in cabinets or concealed in wall. There are types for unit heaters, water tanks, cooking kettles, sterilizers—in fact every application of temperature control as applied to steam or water between freezing and 300° Fahrenheit.

Sterling Engineering Co.
3732 North Holton Street
Milwaukee, Wisconsin

Without obligation, send me detailed information on Sterling Thermostatic Controls for:

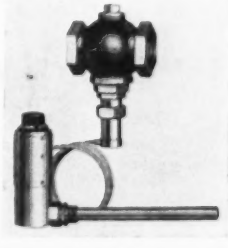
- ☐ Individual Rooms Direct or Concealed Radiation
- ☐ Air Conditioning
- ☐ Unit Heaters
- ☐ Tanks (Any Liquid)
- ☐ Domestic Water Supply Mixing Valves

Name .....

Firm .....

Street ..... State .....

City .....



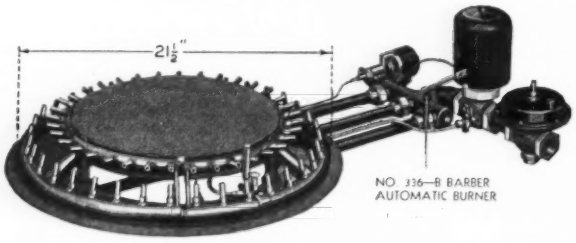
Tank Control THERMOTROL

Regulates temperature of liquids in tanks within 1½°. Like all Sterling Controls, provided with a simple, hand-operated dial that can be locked for any desired temperature by means of a key which is furnished with each shipment.

Sterling
ENGINEERING COMPANY
EST. 1916
3732 N. Holton Street, Milwaukee, Wis.

What

BARBER BURNER "LEADERSHIP" Means to You



THE impressive record of Barber Automatic Gas Conversion Burners, over a period of more than 18 years, has a definite meaning for you. You are interested in BIGGER SALES—"clean" sales—without frequent servicing and removals. Your customers insist on TROUBLE-FREE heating and SENSIBLE fuel costs. Barber Burners have exclusive, patented features of COMBUSTION and OPERATION which no other burner CAN copy. By unquestionably superior performance, Barber Burners have won the loyal support of a host of ALERT and SUBSTANTIAL Heating Dealers and Gas Appliance Manufacturers.

- Eight "tailor-made" sizes to accommodate round grate diameters from 12" to 34". Also "tailor-made" to SUIT and FIT the grate dimensions of oblong furnaces or boilers.
- Insure a "scrubbing" flame action on side walls of firebox, at the proper level, with 1900° Fahrenheit flame temperature.
- No fire brick or refractory elements needed to deflect the flame to the side-walls.
- Barber Burners require only 70% of the installation time of average Burners using refractories.
- Equipped with the improved Barber vacuum-principle noiseless jets, unequalled for air-mixing efficiency, unaffected by dirt, corrosion or condensation.
- Furnished with "Baltimore" or "Klixon" Safety Pilot Control—positive and accurate.
- Listed in the A. G. A. Directory of Approved Appliances.

We supply Sales Literature, Specification Data Sheets and Practical Sales Assistance. Write at once for our NEW Illustrated Catalog No. 37 and Revised Price List.

THE BARBER GAS BURNER CO.
3704 Superior Ave. Cleveland, Ohio
Address Michigan Inquiries to
The Barber Gas Burner Company of Michigan
4475 Cass Ave., Detroit, Michigan

BARBER *Automatic* JET GAS BURNERS
for Warm Air Furnaces, Steam and Hot Water Boilers and Numerous Other Heating Appliances

and cross-section drawings of the different types of the units; and a page devoted to dimensions and data are included in the bulletin, the size of which is 8½ in. by 11 in.

Volume on Water Analysis

The eighth edition of "Standard Methods of Water Analysis," has been published by American Public Health Association, 50 W. 50th St., New York City. The text covers sanitary examination of water, mineral examination of water, sewage and pollution, examination of sewage sludge and muds, microscopical examination of water, microscopical examination of sewage sludge and bottom sediments and bacteriological examination of water. Tables and drawings illustrate the text. The volume contains 309 pages and is bound in red cloth.

Hot Water System Catalog

Bell & Gossett Company, 3000 Wallace St., Chicago, has issued a catalog covering their line of water heating systems and specialties. The catalog consists of bulletins (most of them printed in two colors) bound in a loose leaf folder. The bulletins are illustrated with photographs, cross section drawings and installation diagrams. Sizes, capacities and installation data are included in tables, charts and descriptions. The catalog contains 50 pages and the page size is 8½ in. by 11 in.

Mailing-Piece on Controls

The Hays Corporation, Michigan City, Ind., has published a mailing piece covering their line of controls and combustion instruments. The folder includes photographs and descriptions of automatic combustion controls, analyzers and test sets, combustion meters and draft instruments. A return mailing card and a small folder featuring a new book on furnace efficiency are attached to the mailing-piece.

New Catalog on Stokers

Anchor Stove and Range Co., New Albany, Ind., has published a sixteen-page, two-color catalog covering their line of stokers. The catalog includes an illustrated article on the features of automatic stoker heat; specifications, drawings, descriptions and cut-away views of the different models; photographs of the controls; and a group of photographs showing the plant and the manufacturing methods of the company. Photographs of installations are on the back cover of the catalog, which is 8½ in. by 11 in. in size.

Soldering Bulletin

Handy & Harmon, 82 Fulton St., New York City, have published a new bulletin No. 1 showing how to use their solder and brazing alloys. Detailed instructions and two pages of hints on the subject of soldering and brazing with this company's products, illustrations of the

recommended procedure to be followed in the making of lap, butt and sheer joints, illustrations of unsatisfactory methods of soldering and brazing and a reference table which lists names, melting points, colors and uses of the sixteen standard alloys manufactured by the company make up the text of the bulletin. Illustrations of time saving methods of soldering also are included. The bulletin contains eight pages.

Temperature Control Booklet

The Temperature Research Foundation of Kelvinator Corp., 420 Lexington Ave., New York City, has published a booklet on temperature control. The text, which was prepared by Shirley W. Wynne, M. D., covers refrigeration and its relation to health by the prevention of the spoiling of foods, and air conditioning and its relation to health. The booklet contains seventeen pages and is approximately 6 in. by 9 in. in size.

Time Control Mailing Piece

A new electric clock control manufactured by Williams Oil-O-Matic Heating Corporation, Bloomington, Ill., is covered in a two-color mailing piece recently released by that company. Photographs and a description of the unit, action photographs, a photograph of an oil burner unit and information concerning a special offer that is being made by the company in regard to the unit are included in the mailing piece.

New Catalog on Boilers

Kewanee Boiler Corporation, Kewanee, Ill., has just issued a new catalog on their line of steel boilers. Cross-section drawings, cut-away views, descriptions and tables of specifications and setting measurements are contained in the catalog. Illustrations on the back cover of the catalog show the different types of boilers that are included in the company's line. The catalog is printed in three colors, contains nineteen pages and is 8½ in. by 11 in. in size.

Gas Range Manual

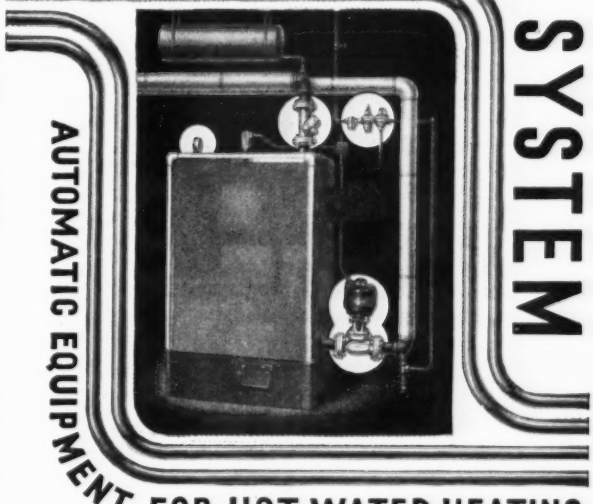
The second edition of the "Range Manual," which contains directions for the servicing of gas appliances, has just been published by American Gas Association, 420 Lexington Ave., New York City. The manual is divided into three parts that deal with, respectively: installation of gas ranges; servicing of gas ranges; and adjusting instructions for specific gas range burners and control. The text is illustrated with drawing and tables. The manual, which is 5¼ in. by 8½ in. in size, is punched for loose leaf binding.

Steel Partition Folders

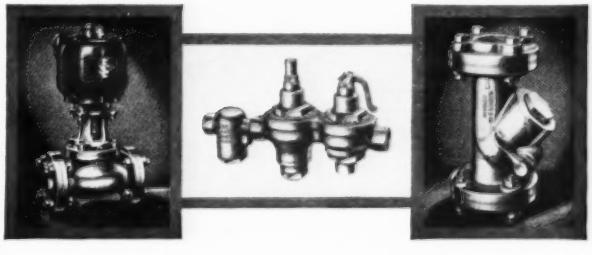
Atlanta Sheet Metal Works, Inc., 799-801 Marietta St., N. W., Atlanta, Ga., has issued two folders covering the line of steel partitions which is manufactured by that company. Illustrations of toilet and shower partitions

KAINER

CIRCULATING SYSTEM



AUTOMATIC EQUIPMENT FOR HOT WATER HEATING



THE circulated type of Hot Water Heating System affords the best known method of efficiently delivering instantaneous heat to radiators and the supply system at all times.

To sell and install the Kainer Circulating System, consisting of the KAINER CIRCULATOR—KAINER CIRCULATION CONTROL and KAINER GOVERNOR, aside from the resultant PROFITS you enjoy, is definitely a sure way of giving your trade complete and FULLY AUTOMATIC closed Hot Water Heating Systems that effectually reduce fuel costs, efficiently and dependably provide more RAPID heat, COMFORT more quickly—modern up-to-the-minute heating systems that dutifully give CARE-FREE service to home owners year after year.

Write for Bulletin No. 66 Today!

KAINER & COMPANY

761 MATHER ST. CHICAGO ILL.

and shower stalls and fittings are included in the folders. Specifications, descriptions, floor plans and detail drawings of the partitions also are covered. The folders are 8½ in. by 11 in. in size and one of them is printed in two colors.

Air Duct Folder

The American Rolling Mill Company, Middletown, Ohio, has just released a small folder on air conditioning ducts made of the sheet metal which that company manufactures. The folder, which is illustrated, contains a discussion of air conditioning ducts and an invitation to the reader to investigate the company's air conditioning equipment. The folder measures 3½ in. by 6 in. in size.

Air Conditioning Catalog

Bulletin K, a condensed catalog of air conditioning products manufactured by Julien P. Friez & Sons, Inc., 4 N. Central Ave., Baltimore, Md., has been published by that company. A data sheet containing a graph showing the results of a recent series of tests to find comparative errors of different types of psychrometers also has been issued by the company. The six-page bulletin contains photographs, cut-away views, descriptions, list prices and type numbers of thermostats, humidostats, controls, indicators and other air conditioning accessories. The bulletin is 8½ in. by 11 in. in size.

Stoker Folder

A four-page, two-color folder describing an automatic stoker heating system manufactured by Link-Belt, 2410 W. 18th St., Chicago, has been published recently by that company. A discussion compares this heating system with other types. A photograph of a typical system illustrates the discussion. The folder is 8½ in. by 11 in. in size.

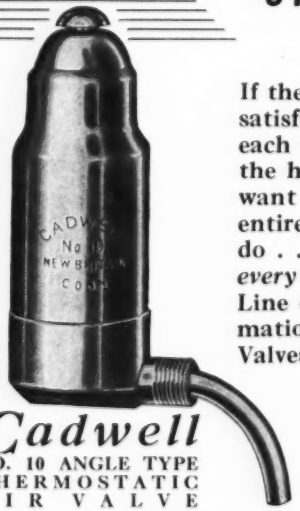
Air Conditioning Unit Booklet

Standard Air Conditioning, Inc., 40 W. 40th, New York City has issued an eleven-page booklet covering a window sill air conditioning unit. A discussion of air conditioning, photographs of installations, a description and a cut-away view of the unit, photographs and descriptions of different models of the unit; ordering instructions; and a list of other air conditioning products manufactured by the company are included in the booklet, which is 5⅜ in. by 8½ in. in size.

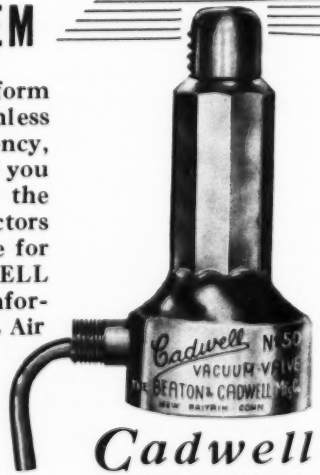
Oil Burner Folder

A two-color folder, just released by Wayne Oil Burner Corporation, 102 Glasgow Ave., Fort Wayne, Ind., describes an oil-fired air conditioning and heating unit manufactured by that company. Photographs of a burner, a burner boiler unit and drawings of some of

They STEP UP THE EFFICIENCY of the HEATING SYSTEM



If the heating system as a whole is to perform satisfactorily, look *first* to the air valves. Unless each radiator valve functions at *top* efficiency, the heating system can't possibly do so. If you want to step up the working efficiency of the entire system do as so many other contractors do . . . recommend a CADWELL Air Valve for *every* radiator. Learn more about the CADWELL Line of Air Valves . . . Write for detailed information . . . or better still, order CADWELL Air Valves from your wholesaler . . . *today*.



Cadwell
NO. 10 ANGLE TYPE THERMOSTATIC AIR VALVE
Positive in action. Completely thermostatically controlled. Furnished also in bottom outlet type. ⅛" and ¼" and ¾" x ⅜" sizes.

WE ALSO MANUFACTURE
a complete line of heating specialties including CADWELL Control and Relief Valves, No. 45 System for Hot Water Heating and PERFECTION Floor and Ceiling Plates.

Cadwell
NO. 50 ANGLE TYPE VACUUM AIR VALVE
Made to *equalize* the one-pipe steam system. Furnished also in bottom outlet type. ¾" and ¾" x ⅜" sizes.

The BEATON & CADWELL MFG. CO.
Established 1894
NEW BRITAIN, CONN.

the parts of the unit are included in the illustrations. Descriptive material accompanies the photographs. The folder is 5½ in. by 8½ in. in size.

Catalog-Sheet on Fan

A catalog-sheet covering a portable night fan has been issued recently by Russell Electric Co., Mfrs., 340 W. Huron St., Chicago. The catalog-sheet contains photographs, a description and the price of the unit; and a series of diagrams, with accompanying descriptions, which show how to use the unit. This piece of literature is about the size of an ordinary business letterhead.

Folder on Combustion Regulator

National Brass Co., 1603 Madison Ave., Grand Rapids, Mich., has prepared a folio for proposals on a combustion regulator manufactured by that company. A folder illustrated with photographs of the unit and several installations, a cross section drawing of the unit, a large drawing showing one of the systems, and containing descriptive material is enclosed in the folio which is 8¾ in. by 11 in. in size.

Book on Technical Drawing

The MacMillan Company, 60 Fifth Ave., New York City, has published a new volume, "Technical Drawing," by Giesecke, Mitchell and Spencer. The book is intended as a class text and a reference book in technical drawing. The text deals with the science and the practical problems of technical drawings. Photographs and drawings illustrate the volume. The book contains 564 pages and is available in a green cloth binding at $3.00 a copy.

Folder on Coal Burner

A three-color folder, just published by Paragon Kol-Master Corporation, Oregon, Ill., covers an automatic coal burner manufactured by that company. A photograph of the unit, a photograph showing the unit installed, a description, a listing of its features and a list of the patents used in the unit are included in the folder which is 3¼ in. by 6⅝ in. in size.

Refrigerating Literature

Bulletin No. 508-A and Catalog H have just been published by Frick Company, Waynesboro, Pa. The bulletin covers their line of freon compressors. Descriptions, photographs of installations, a two-page cross-section drawing of one of the units, specifications, an illustration of the unit and descriptions and illustrations of other machines manufactured by the company are contained in the bulletin. The catalog includes photographs, descriptions and tables showing prices, catalog numbers and sizes of ammonia valves and fittings. A discount notice and an ordering blank are enclosed in the catalog. The bulletin is 8½ in. by 11 in. in size and contains sixteen pages; and the catalog, which is the same size, contains 36 pages. Both are printed in two colors.

THIS WAS OUR STORY IN 1934 ——— And It's Still Our Story . . . . .

Results have certainly justified the Whiting prediction of two years ago.

Ever-mounting sales of Whiting Stokers reveal a great mass market.

Whiting was the profit pioneer of the stoker industry because this was the first stoker set-up to sell from house to house and block by block.

Thanks to Whiting and its aggressive dealer organization, the man of medium means can now afford Automatic Heating—while even the man of more than the average means cannot afford to be without its many economies.

Dealers who can still secure the Whiting Line should do so while they can. It pays substantial profits because it opens up the biggest market.

Your Next Great Market

Underfeed Stoker Division,
WHITING CORPORATION
15604 Halsted St., Harvey, Ill.

We are dealers in.....

distributors in.....

Send the facts regarding the Whiting Stoker.

Name.....

Address.....

WHITING STOKER

Ask for this Blade! Try it!

MILFORD

FLEXIBLE DUPLEX

You'll say it's the best blade you've ever used.

Length and pitch stamped on blade for quick identification.

CUTS COPPER AND BRASS TUBING
Angle Iron, Small Pipe, Etc.

—and leaves the tubing in perfect condition for a sweated joint.

—saves the tubing from scratches, marring and false cuts which ruin it.

—cuts on the first stroke.

—cuts on exact mark—will not slip off.

—costs no more than the ordinary blade.

Order From Your Jobber

THE HENRY G. THOMPSON & SON CO.
NEW HAVEN, CONN.

HEATS FAST--SELLS FAST--SAFE--ODORLESS

Built by **TURNER**

Simple, easy to operate, the No. 611 GASOLINE WATER HEATER heats 200 gallons of water to bath temperature on a single gallon of gasoline. Sell this heater to home owners. Sell it to factories, laboratories, farmers for dairy use, and wherever automobiles are washed. Creates sales of pipe, fittings, and other plumbing installations.

Specifications: Height overall, with stand, 34 inches; without stand, 23 inches; diameter of base, 10 inches; ¾ inch pipe connections; capacity for 30-gallon range boiler; capacity of fuel tank 1 gallon. Burns gasoline. List price, $17.

THE TURNER BRASS WORKS
405 Park Ave., Sycamore, Ill.

(Also blotorches and firepots since 1871).

Gas Burner Catalog

Catalog No. 37 has been published by The Barber Gas Burner Company, 3702 Superior Ave., Cleveland, Ohio, covering that company's line of domestic and industrial gas burners. A general discussion of the burners, description and illustrations of the units, cutaway views of installations, installation diagrams, a page of fuel consumption information, and specification charts are included in the catalog. The last section of the book is devoted to valves, controls and other accessories and parts of the burners. The catalog contains 44 pages, is printed in two colors and the page size is 8½ in. by 11 in.

Fan and Heater Data Book

Buffalo Forge Company, 490 Broadway, Buffalo, N. Y., has published a data book on their line of products. Fans, heaters, air washers, unit heaters and power blowers are listed in the book which is compiled from literature previously issued by the company. Illustrations, charts, tables and descriptive material are contained in the book. Much of the literature is printed in colors. The pages are 8½ in. by 11 in. in size. The material is arranged in sections which are indicated by index tabs.

New Booklets on Insulation Material

Three 8½ in. by 11 in. booklets, covering insulation materials manufactured by Armstrong Cork Products Company, 980 Concord St., Lancaster, Pa., have been released by that company. One booklet contains specifications for installing the cork covering made by that company; one is on insulating board and lath and interior finishes; and the other features cork covering for cold lines. The latter booklets contain photographs, drawings, discussions, specifications, directions, charts and tables.

New Oil Boiler Bulletin

National Radiator Corporation, 221 Central Ave., Johnstown, Pa., has issued a bulletin on their new oil heating boiler. A drawing and a cut-away view of the unit, a listing of its features and a general description are contained in the four-page bulletin. Drawings and tables of ratings and dimensions also are included. The bulletin is printed in two colors and is 8½ in. by 11 in. in size.

Ventilation Manual

"Ventilation Manual for Sheet Metal Contractors," by Paul R. Jordan, has been published recently by Edwin A. Scott, 45 W. 45th St., New York City. The book is intended to solve the problems met by the sheet metal contractor in planning and installing the type of ventilation for which he is called upon. The text covers the subject from the business angle, the physical factors, specific problems, equipment, design data and specific

applications. Drawings illustrate the text. The book contains 351 pages and is 5 in. by 7¼ in. in size.

Air Conditioning Literature

Harvey-Whipple, Inc., 55 Emery St., Springfield, Mass., has released a two-color pamphlet and an engineering data sheet on a conditioned warm air heating unit manufactured by that company. A description of the unit, illustrated with full and cut-away views of the unit and its parts, occupies two pages. Photographs and descriptions of other models of the unit also are included. The engineering data sheet is illustrated. The pamphlet, and both pieces of literature are 8½ in. by 11 in. in size.

Steam Trap Literature

Yarnall-Waring Co., Chestnut Hill, Philadelphia, Pa., has published a new four-page, four-color bulletin explaining a steam trap manufactured by that company. Three cut-away views, in colors, show the features of construction and the unit in operation. A three-color folder, which accompanies the bulletin, also gives construction and operating features. It is illustrated and contains tables and descriptive material. The bulletin is the size of a business letterhead and the folder is 3½ in. by 8½ in. in size.

Oil Burner Nozzle Literature

A bulletin and a two-color folder covering oil burner nozzles manufactured by Balloffet Diamond Wire Dies Co., Inc., 13 E. 22nd St., New York City, have been issued by that company. The bulletin, which contains four pages and is about the size of an ordinary business letterhead, includes descriptions and cut-away views of different type nozzles, a guarantee, a capacity table and instructions for ordering. The folder, 3½ in. by 6 in. in size, contains photographs, a cut-away drawing of the unit and a discussion of the features of the construction.

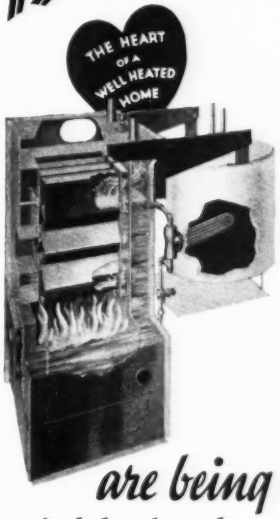
Oil Burner Folder

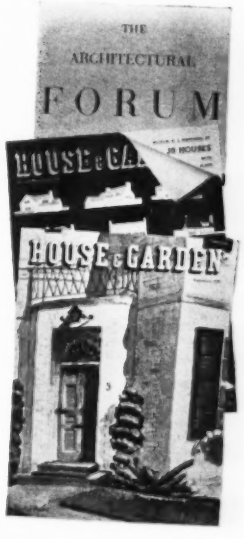
A four-page, three-color folder announcing a new oil burning boiler manufactured by The Thatcher Company, 39 St. Francis St., Newark, N. J., has been issued by that company. A photograph and a description of the unit, which includes a list of its features; two cut-away views of the unit; and a page of engineering data and capacities, which includes tables and a drawing, are contained in the folder which is 8½ in. by 11 in. in size.

Electric Tool Catalog

A three-color catalog, published by Black & Decker, Towson, Maryland, covers that company's line of portable electric tools. A photograph of each unit, accompanied by a description which gives features, applications, specifications, accessories and prices is included in the catalog which contains 53 pages and is 8½ in. by 11 in. in size.

157,000 of your Prospects





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WATERFILM BOILERS!

National advertising in House and Garden and Architectural Forum is telling your prospects of the many advantages of the WATERFILM BOILERS.

Advantages that carry a strong selling punch for you—a quick heating, slow cooling boiler built especially for automatic firing—of welded steel construction—handsomely designed jacket—provider of abundant year round hot water supply—and a great saver in fuel costs.

Home owners, architects, engineers, contractors, realtors, and bankers—some 157,000 know about these features and of the test wherein WATERFILM showed a saving in fuel consumption of 35% and 34% over two other steel boilers. They know that the WATERFILM is THE efficient boiler that will operate with greatest economy—that has been known, in many cases, to have saved as much as 50% in fuel bills.

Profit by the market that WATERFILM BOILERS and WATERFILM Advertising have created for you. Write today for further information.

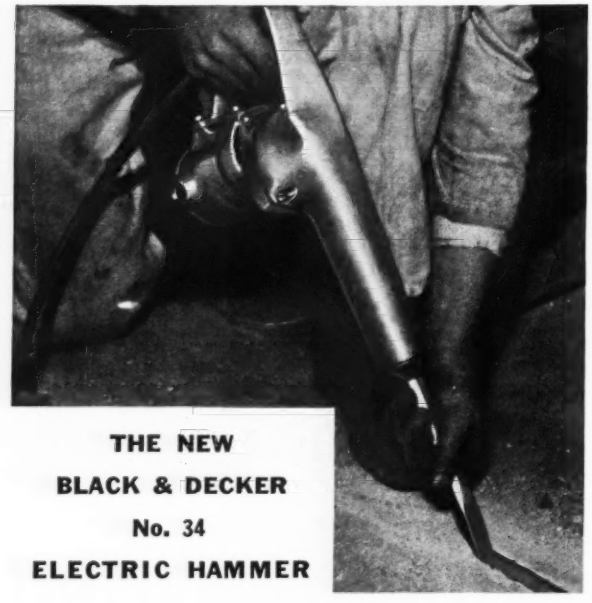
WATERFILM BOILERS, INC.
154 Ogden Ave. :: Jersey City, N. J.

THE FLASH BOILER STABILIZED

A KOVEN PRODUCT

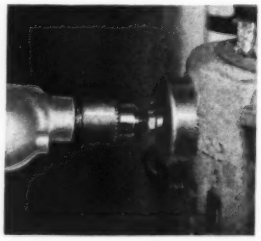
3 COST-CUTTING TOOLS

Which Should Be in Every Installation Man's Kit



THE NEW BLACK & DECKER No. 34 ELECTRIC HAMMER

saves time, money and temper when drilling in concrete, stone or brick for mounting burners, control racks, wall pumps; channeling for feed lines; caulking furnace joints, etc. Short, light, perfectly balanced, easy to use in awkward places. Capacity, 1⅛" in concrete. Operated by Universal Motor (110, 220 or 250 volts optional) and requires no transformer, rectifier or other extra equipment. Complete with Star Drill, two turning chucks, 3-conductor cable and plug, drift key and carrying case.....Only **$145.00**



B & D HOLE SAWS

used with a ½-inch or larger electric drill, quickly cut clean, round holes in furnace doors, bases, boilers, tanks, pipes, floors, walls, etc. Two types: COARSE TOOTH, for wood, fibre, bakelite, cast iron, etc. FINE TOOTH for sheet metal, steel and all thin materials. 24 sizes, ¾" to 4" in diameter.

B & D ½-in. JUNIOR DRILL

A quality-built, low-cost drill for the installation man's kit. Capacity ½" in steel, 1" in wood. Drives B & D Hole Saws up to 3½" in diameter. Only **$35.**

* * *

Ask your Black & Decker Jobber to demonstrate these tools, or write for full information.

THE BLACK & DECKER MFG. COMPANY
721 Pennsylvania Ave., Towson, Md.

BLACK & DECKER

World's Largest Manufacturer of

PORTABLE ELECTRIC TOOLS

Water Circulator Mailing-Piece

Evry-Use Products, Inc., New York City, has published a mailing-piece covering a hot water circulator manufactured by that company. A drawing and a listing of the outstanding features of this unit, and drawings and a description of a mixing valve also manufactured by the company are included in the mailing-piece. A return mailing card is attached. The mailing-piece is 3½ in. by 7¾ in. in size.

Literature on Stokers

Cotta Transmission Corporation, Rockford, Ill., has issued a catalog, a pamphlet and a booklet on their stokers. The pamphlet, which has nine pages, contains stoker sales arguments. The catalog covers commercial stokers and the booklet is on domestic stokers. Descriptions, testimonials, photographs of the units, of installations and of the plant where they are made are included in the booklet and catalog which are both printed in colors. The catalog and the pamphlet are 8½ in. by 11 in. in size, and the booklet is 5½ in. by 8½ in. in size.

Tool Catalog

The Cincinnati Electrical Tool Co., Madison and Edwards Rds., Cincinnati, Ohio, has published Catalog No. 27, covering their line of ball bearing electric drills, screw drivers, nut setters, tappers, valve grinders, aerial grinders, tool post grinders, floor buffers, bench and floor grinders and high speed cut-off machines. Photographs, descriptions, and specification tables for each unit are included. Some of the units are illustrated further with drawings and cut-away views. The catalog is printed in two colors, contains 40 pages and is 8½ in. by 11 in. in size.

Oil Burner Sales Letters

May Oil Burner Corporation, Maryland Ave. and Oliver St., Baltimore, Md., has issued a folio of sales letters. This list of sample letters, which are intended to be retyped and sent by dealers, includes a series of letters for each product manufactured by the company. Letters to precede calls, follow-up letters, "thank you" letters and goodwill letters are included in the group. The letters are printed on ordinary business letterheads and are enclosed in a folder.

Perspective Notebook

"Calibron Notebook," No. 3, recently published by Calibron Products Incorporated, 51 Lakeside Ave., West Orange, N. J., deals with perspective and optical illusions of depth. It is divided into three sections which deal respectively with: illusions of depth; perspective methods; and perspective problems. Photographs and diagrams illustrate the text. A chart of a comparison of perspective methods, a partial index and key to terms and symbols are included in the booklet. The booklet, which contains 44 pages, is 6 in. by 9 in. in size.

Catalog on Valves

The Beaton and Cadwell Mfg. Co., New Britain, Conn., has issued a catalog covering their line of floor and ceiling plates, air and vacuum valves, steam specialties and flush valves. Each unit is described and illustrated with photographs, drawings or cut-away views. Style numbers and list prices also are included. The catalog is loose leaf bound and is 8½ in. by 11 in. in size. Some of the pages are printed in colors.

Water Heater Mailing-Piece

A large three-color mailing-piece, recently issued by Ruud Manufacturing Company, 2934 Smallman St., Pittsburgh, Pa., covers their line of water heaters. Photographs and descriptions of some of the water heaters in the company's line, classified into groups, are shown. Reasons for sales opportunities for the line this summer are set forth in the folder which is 9¼ in. by 12 in. in size, when folded. A return mailing card is attached to the mailing piece.

Heat Saver Literature

American Heat Saver Company, 24 N. 14th St., Newark, N. J., has issued literature on their line of heat saving equipment. Sheets of installation drawings and sectional views of the units, together with dimensions and specifications, form work sheets to be used for ordering equipment, a booklet containing photographs, descriptions, installation and operating features of the equipment, and a chart on fuel combustion are included. Each piece of literature is approximately 8½ in. by 11 in. in size.

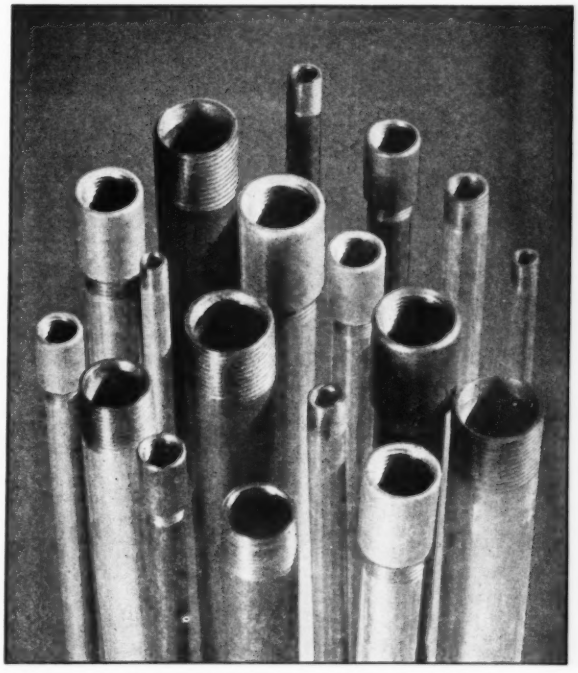
Air Conditioning Catalog

Ilg Electric Ventilating Company, 2850 N. Crawford Ave., Chicago, has issued catalog No. 436 covering their line of air conditioning equipment, and catalog 436A which contains simple instructions for estimating for their line of cooling systems. Photographs and descriptions of the different types of cooling units, specifications, diagrams, tables and a data sheet are contained in the former. Suggestions and rules for planning and installing, operating and servicing air conditioning systems, illustrated by charts and tables, are contained in the second catalog. Catalog No. 436 contains 32 pages, the other contains 64 pages, and both are 8½ in. by 11 in. in size.

Solder and Flux Folder

A sixteen-page booklet has been issued by American Solder and Flux Co., Wayne Ave. and Berkley St., Philadelphia, Pa. The booklet, which is 3½ in. by 6¼ in. in size, contains a description of the company's line of solder and flux together with illustrations of the containers in which they are sold. A description and an illustration of an automatic soldering machine also are included.

THERE'S A VAST DIFFERENCE IN STEEL PIPE



. . . AND THIS IS THE REASON

When you think of Fretz-Moon Pipe, don't consider it as ordinary steel pipe. It is made of a different type of material and by an exclusive manufacturing process—both of which combine to produce pipe possessing a high degree of uniformity, ductility and cleanliness not found in steel pipe made by ordinary methods.

The material—steel of evenly high quality, specially rolled into skelp and formed into coils containing as much as 1200 feet in a single length.

The process—an exclusive method of manufacture known as the "continuous process" from which modern scientific instruments and engineering have eliminated all guesswork, all chance. Every inch of pipe made by this process is the same in quality as every other inch. Never under- or over-heated. Always mechanically perfect.

If you would like to know more about the difference in steel pipe, write for the complete story of the "continuous process." It will be sent you in illustrated booklet form.

FRETZ-MOON TUBE CO., INC.
BUTLER • PENNA.

FRETZ-MOON PIPE
BLACK AND GALVANIZED

BOILERS • TANKS
STORAGE HEATERS

IN COPPER SILICON ALLOY AND ALL COPPER

Large Boilers, Tanks and Storage Heaters for Hotels, Hospitals, Schools, Institutions, Office and Apartment Buildings and all Industrial Purposes.

Jobbers and Plumbing Contractors working on Government orders, Federal Specifications WW-P-541, will find Gerstein & Cooper equipped to meet exacting specifications on production and deliveries.

G & C RANGE BOILERS
GUARANTEED 20 YEARS
IN COPPER SILICON ALLOY AND ALL COPPER
A PROFITABLE LINE TO HANDLE

GERSTEIN & COOPER CO.
Main Offices and Factory
SOUTH BOSTON, MASS.

NEW YORK
Edward Sinn, Harrison, N. J.

BALTIMORE
Lydon, Cousart & Co., Charlotte, N. C.

KLEEN TUBE
HEATER Catalog
NO. 110
Just off the press
A COPY IS YOURS FOR THE ASKING!
ADAMS ENGINEERING CO., Inc.
2607 WENTWORTH AVE., CHICAGO

Hot Water Tank Bulletin

American Radiator Company, 40 W. 40th St., New York City, has issued a four-color, four-page bulletin on a tank and boiler for a domestic hot water supply system, and a two-color catalog-sheet on a floor and ceiling plate. The bulletin includes a description of the new metal of which the units are manufactured; drawings of installations; capacities and roughing-in dimensions; and information about the guarantee and freight terms. The catalog-sheet contains illustrations and descriptions of a floor and ceiling plate, a description and illustration of a fitting and a list of the company's branch offices and show rooms. Both pieces of literature are 8½ in. by 11 in. in size.

Bulletin on Vibration Isolation

Bulletin 53-C, published by The Korfund Company, Inc., 48 Thirty-second Pl., Long Island City, N. Y., covers vibration isolation by a device manufactured by that company. An abstract of a paper on vibration isolation occupies the first page. A description of the unit includes construction details, installation features and applications of the unit. Illustrations of installations, ordering instructions, a table of the standard series of the units, cross-section drawings and a series of diagrams of the different types also are included. The bulletin is about the size of an ordinary business letterhead and is printed in two colors.

Water Softener Bulletins

Zeolite Engineering Co., 4642 Ravenswood Ave., Chicago, has issued four bulletins on their line of water softeners. Photographs, cross section drawings and descriptions of the various models of the units are contained in the bulletins. Two of the bulletins contain tables of capacities and dimensions. The other two bulletins, which are printed in colors, include lists of installations and of users of the units. The bulletins are 8½ in. by 11 in. in size.

Bulletin on Valves

A three-color, four-page bulletin issued by Jenkins Bros., 80 White St., New York City, covers the line of valves for soldered ends manufactured by that company. A description of the line, photographs and cut-away views of some of the valves and a list of the details of the valves are included in this piece of literature. The bulletin is 8½ in. by 11 in. in size.

Bulletin on Air Conditioner

Westinghouse Electric & Manufacturing Company, Mansfield, Ohio, has prepared a four-page, two color bulletin on an air conditioning unit manufactured by that company. Photographs of installations, a cut-away view with accompanying descriptions and an illustrated page of descriptions and specifications are contained in the bulletin, which is 8½ by 11 in. in size.

Catalog of Rubber Specialties

Catalog D, published by The Canfield Rubber Co., covers that company's line of rubber products. Tank balls, furnace bulbs, washers, fuller balls, bumpers, connections, elbows, diaphrams, stoppers, tubing and friction tape are among the products listed. The products are illustrated and described and are accompanied by their model numbers and standard sizes. The catalog contains 32 pages and the page size is 8½ in. by 11 in. It is loose leaf bound.

Fittings and Specialties Catalog

The Hedges-Walsh-Weidner Company, 1032 W. Main St., Chattanooga, Tenn., has issued Catalog No. 8, covering their line of soil and pipe fittings, range boilers, tanks and specialties. The products are shown by photographs and drawings, and are accompanied by descriptions and tables showing sizes, weights and prices. Several pages of compound discount tables are included at the back of the book. This catalog, which measures 8½ in. in width by 11 in. in length, contains 35 pages.

Bulletin on Unit Heater

Modine Manufacturing Company, Racine, Wis., has just issued Bulletin No. 836, describing a unit heater designed for use in textile mills. A description of the unit, photographs and cross-section drawings of the unit and a table of capacities and auxiliary data are included. The bulletin is 8½ in. by 11 in. in size and contains four pages.

Literature on Pumps

Bender-Warrick Corporation, Birmingham, Mich., has published an eleven-page bulletin, six one-sheet bulletins and a price schedule on their line of induction relays and floatless pump controls. The larger bulletin contains descriptions, diagrams and photographs. The one-sheet bulletins contain diagrams and descriptions. The price list, in addition to prices, contains instructions for ordering. The bulletin is 8½ in. by 11 in. in size, and the price schedule is 7¼ in. by 10 in. in size.

Catalog of Plumbing Fixtures

Bradley Washfountain Co., 2203 W. Michigan St., Milwaukee, Wis., has published Catalog No. 435 covering group washing fixtures manufactured by that company. Washfountains, group showers, group shower and dressing room combinations, foot fountains and street and playground showers are listed. A description of the line, photographs and descriptions of construction materials, and photographs, descriptions and roughing dimensions of the units and their accessories are included in the two-color catalog. It contains nineteen pages and measures 8½ in. in width by 11 in. in length.

PARAGON FAUCETS need no introduction at all to the plumbing trade. This is just "reminder advertising." Wherever self-closing faucets are used, Paragon has long been a preferred product. Famous for sturdy construction, ease of adjustment and repair, and exclusive Samson Handle Lock. Now offered in a variety of pleasing, modern handle designs—faucets whose good looks are in keeping with their notable good behavior.

● Ask your Wholesaler to show you the latest models in these reliable trouble-and-water-savers. New descriptive folder on request.

CENTRAL BRASS MFG. CO.
2955 East 55th Street Cleveland, Ohio

CENTRAL
Plumbing
BRASS GOODS

CENTRAL BRASS

Preferred by thousands of engineers

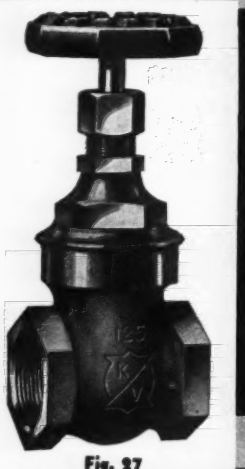


Fig. 27

TIGHT closure, instant release, easy operation and economical maintenance -- these four fundamentals of satisfactory valve service are characteristic of every Kennedy type. Thousands of valve users know this to be true from personal experience -- that is why Kennedy Valves are so widely preferred. Try Kennedys on your next order for valves and you will soon see the many advantages of standardizing on them.

THE KENNEDY VALVE MFG. CO., ELMIRA, N.Y.

KENNEDY

VALVES-PIPE FITTINGS-FIRE HYDRANTS

BUY KENNEDY PRODUCTS FROM YOUR LOCAL DEALER

VITAL to the ONE-PIPE SYSTEM!

WHERE satisfactory performance is the main objective in the one-pipe steam system, "KELLY" Valves are a *vital* factor. If the radiators are completely equipped with "KELLY" Valves, properly balanced room temperatures with consequent greater domestic comfort and extraordinary fuel savings will invariably result. In short "KELLY" Valves will give your customers exactly the kind of performance they want . . . the kind they deserve. When you sell them "KELLY" Valves, you sell them real heating satisfaction. No matter what their valve requirements may be . . . no matter how large or how small their budget . . . a valve from the "KELLY" Line will meet them. Descriptive literature sent upon request.

TRADE MARK KELLY

VALVES for SATISFACTION

NATIONAL METAL PRODUCTS CORP.
15-21 N. Sheldon St., Chicago
Eastern Office and Warehouse—
Evins F. Glore Sales Corp.
Grand Central Terminal Bldg.
New York, New York

Pipe Tool Catalog

Armstrong Manufacturing Company, Bridgeport, Conn., has issued Catalog No. 36, describing their line of pipe tools. An illustration, a description and tables showing prices and dimensions of each unit in the line are included in the catalog. Products of a similar type are grouped together. The catalog contains twelve pages and is 9 in. by 11¼ in. in size. It has a two-color cover.

Plumbing Literature

Alert Products, Inc., 46 Cole St., Rochester, N. Y., has issued a group of folders and envelope stuffers covering some of the products which they manufacture. A bilge pump, a trap pump, an expanding plunger, a hydraulic fluid gun, a grease gun loader, a grease gun, an oil gun, suction and force pumps, a filling and draining pump and a faucet adapter are described and illustrated in the literature. Some of the literature is printed in colors, and both envelope stuffers and folders are approximately 3¼ in. by 6 in. in size.

Catalog on Tools

Catalog No. 16 has been issued by Kraeuter & Company, Inc., 585 Eighteenth Ave., Newark, N. J., covering their line of pliers, wrenches, chisels and automotive and machinist tools. The catalog contains illustrations, descriptions and specifications of the products. A section at the back of the catalog contains illustrations of display cases offered by the company. A price sheet is included at the beginning of the book. The catalog contains 24 pages, is printed in four colors, and is 8½ in. by 11 in. in size.

Oil Burner Mailing-Piece

Syncro-Flame Burner Corp., 1200 Park St., Hartford, Conn., has brought out a mailing-piece on an oil burner manufactured by that company. It contains a description of the unit, a photograph and drawing of the unit and drawings and descriptions of other models manufactured by the company. A return mailing card is attached to the mailing-piece which is 6½ in. by 9½ in. in size, when folded.

Air Conditioning Literature

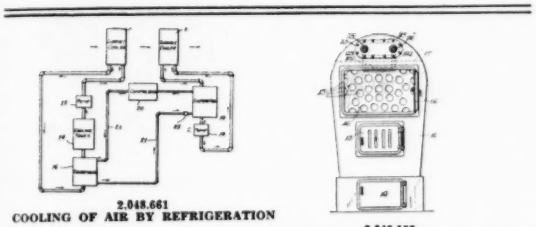
Hoffman Specialty Company, Inc., Waterbury, Conn., has released some new literature on an air conditioner and a heat controlling system which that company manufactures. A seventeen-page, three-color booklet, a four-page bulletin and a three-color broadside are included in the literature. Photographs and cross-section drawings are included in the illustrations which accompany the descriptive material and the technical data. The booklet and the bulletin are 8½ in. by 11 in. in size, and the broadside measures approximately 25 in. in width by 28 in. in length.

NEWS *of* PATENTS

Heating

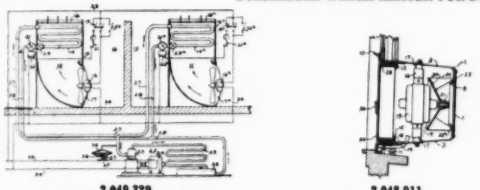
2,048,661. Cooling of Air by Refrigeration. Matthew M. Lawler, Chicago, Ill., assignor to The Cooling and Air Conditioning Corporation, Hyde Park, Boston, Mass., a corporation of New York.

2,049,329. Control Mechanism. Lewis R. Smith, Pittsburgh, Pa., assignor to Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., a corporation of Pennsylvania.



2,048,661
COOLING OF AIR BY REFRIGERATION

2,049,153
SUBMERGED WATER HEATER FOR BOILERS

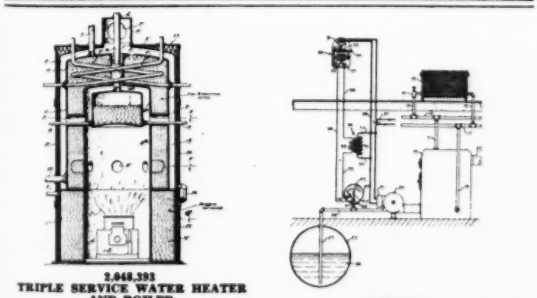


2,049,329
CONTROL MECHANISM

2,048,911
AIR FILTERING DEVICE

2,049,153. Submerged Water Heater for Boilers. Carlos E. Bronson, Kewanee, Ill., assignor to Kewanee Boiler Corporation which is located in Kewanee, Ill., a corporation of Delaware.

2,048,911. Air Filtering Device. Herbert L. Zimmerman, Milwaukee, Wis.

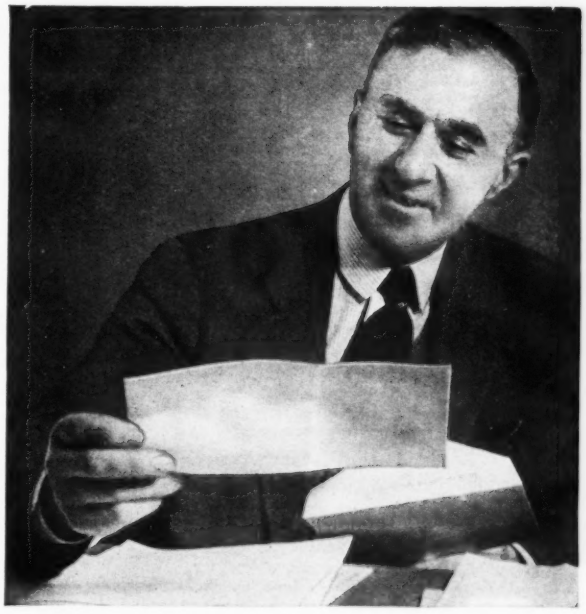


2,048,393
TRIPLE SERVICE WATER HEATER AND BOILER

2,048,653
INDICATING AND CONTROLLING SYSTEM

2,048,393. Triple Service Water Heater and Boiler. Rudolf Kroger, whose address is given as Niles Center, Illinois.

2,048,653. Indicating and Controlling System. Daniel G. Taylor, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Company, Minneapolis, Minn., a corporation of Delaware.



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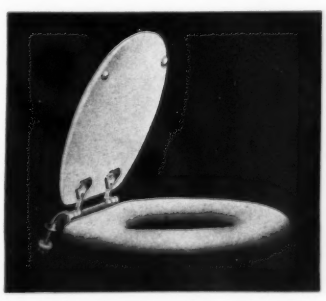
● A COMPLETE PLUMBING JOB — yet all the customer wanted at first was a new toilet seat. But it gave the master plumber an opening and his salesmanship sold the customer on a complete job. Many times the sale of a CHURCH SANI-SEAT is the opening wedge to a complete plumbing installation.

Besides helping additional sales, CHURCH SANI-SEATS are themselves a good item of profit for the master plumber. They are one of the few items that can be sold over the counter . . . that are bought and paid for on the spot.

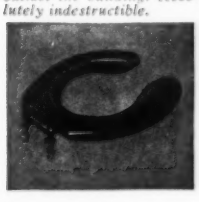
There is a CHURCH SANI-SEAT for every type of water closet and for every use. They are available in a wide range of colors, styles and prices. The famous CHURCH quality and workmanship are present even in the lowest priced seats.

CHURCH SANI-SEATS are sold only through Master Plumbers.



● CHURCH SHEET COVERED SEATS *in white and color will not crack, chip or peel.*

● CHURCH SANI-BLACK SEATS *outlast the building. Absolutely indestructible.*



C. F. CHURCH MFG. CO. · HOLYOKE, MASS.
Division of American Radiator & Standard Sanitary Corp.

CHURCH Sani SEATS
THE ENTERING WEDGE TO GREATER SALES

South Chester Pipe . .

Architect:
John T. Windrim
Plumbing and Heating Contractor:
W. W. Muench

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. . . *is installed in*

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South Chester Pipe is rendering *outstanding service* in many of America's most *outstanding buildings.*

A bid based on "Chester" is a bid for immediate and future business, for the profit-making prestige of South Chester Pipe is built on years of trouble-free dependability.

Our nearness to your market assures prompt and economical delivery. Write for full particulars.

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South Chester Tube Co.

Chester, Pa.

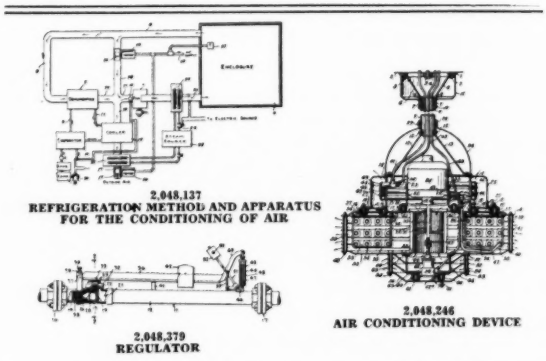
New York Office: 30 Church Street

Pittsburgh Los Angeles San Francisco
Fort Worth Tulsa Houston

CHESTER STEEL PIPE

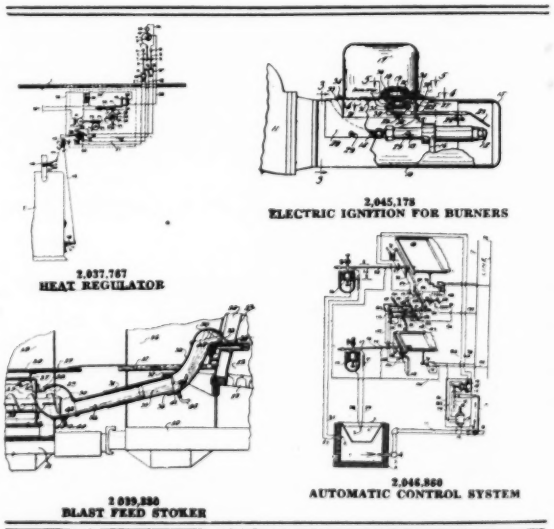
2,048,137. Refrigeration Method and Apparatus for the Conditioning of Air. Robert T. Palmer, Sharon, Mass., assignor to B. F. Sturtevant Company, Inc., Hyde Park, Boston, Mass.

2,048,379. Regulator. James K. Hamilton, Sunnyside, Long Island, N. Y., assignor to Air Reduction Company, Incorporated, New York, N. Y., a corporation of New York.



2,048,246. Air Conditioning Device. Don E. Dasher, Harrison Township, Montgomery County, Ohio, assignor to Trupar Manufacturing Company, Dayton, Ohio, a corporation of Ohio.

2,037,767. Heat Regulator. Oscar H. Dicke, Rochester, N. Y., assignor to Pioneer Heat Regulator Corporation, a corporation of New Jersey.



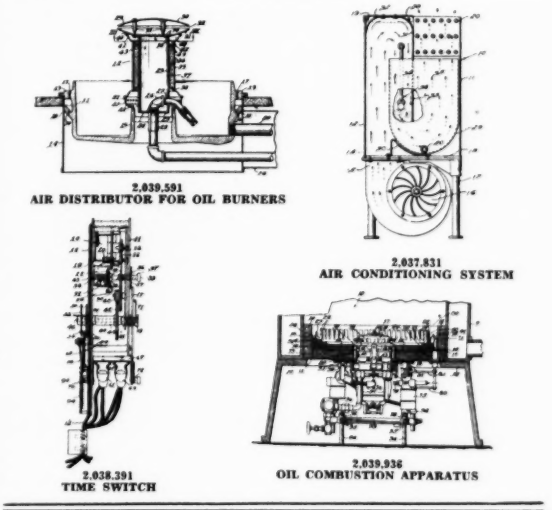
2,039,880. Blast Feed Stoker. Howard P. Anderson, Erie, Pa., assignor to The Standard Stoker Company, Incorporated, a corporation of Delaware.

2,045,178. Electric Ignition for Burners. Warren H. De Lancey, Springfield, Mass., assignor to Gilbert & Barker Manufacturing Company, West Springfield, Mass., a corporation of Massachusetts.

2,046,860. Automatic Control System. Christian Wilhjelm, Philadelphia, Pa., assignor, by mesne assignments, to Automatic Temperature Control Co., Inc., Philadelphia, Pa., a corporation of Pennsylvania.

. 2,039,591. Air Distributor for Oil Burners. Jackson G. Gilmore and Milton D. Huston, Columbus, Ohio, assignors to Franklin Oil Heating Inc., Columbus, Ohio, a corporation of Ohio.

2,038,391. Time Switch. Carl E. Sundberg, Quincy, Mass., assignor to Albert & J. M. Anderson Manufacturing Company, Boston, Mass., a corporation of Massachusetts.



2,039,591
AIR DISTRIBUTOR FOR OIL BURNERS

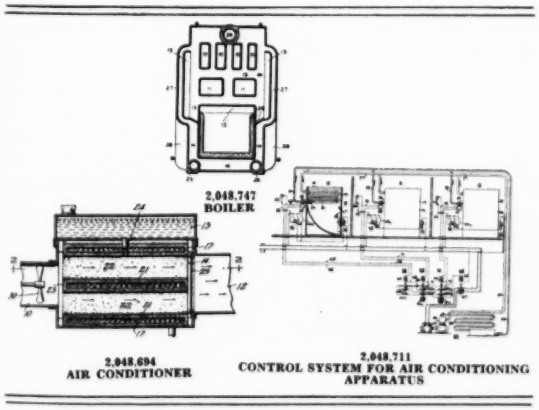
2,037,831
AIR CONDITIONING SYSTEM

2,038,391
TIME SWITCH

2,039,936
OIL COMBUSTION APPARATUS

2,037,831. Air Conditioning System. Allen C. Staley, Birmingham, Mich., assignor to Chrysler Corporation, Detroit, Mich., a corporation of Delaware.

2,039,936. Oil Combustion Apparatus. Oscar C. Schroeder and Stanley Perry, Chicago, Ill.; said Perry assignor to Automatic Burner Corporation, Chicago, Ill., a corporation of Illinois.



2,048,747
BOILER

2,048,694
AIR CONDITIONER

2,048,711
CONTROL SYSTEM FOR AIR CONDITIONING APPARATUS

2,048,747. Boiler. Aaron Klotzman, Baltimore, Md., assignor to May Oil Burner Corporation, a corporation of Maryland.

2,048,694. Air Conditioner. Gordon D. Harris, Freeport, N. Y., assignor, by mesne assignments, to Harris Air Conditioner Corporation, New York, N. Y., a corporation of New York.

2,048,711. Control System for Air Conditioning Apparatus. Raymond J. Ridge, Lansdowne, Pa., assignor to Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., a corporation of Pennsylvania.

For Users of Process Steam

Webster Series "78" Thermostatic Traps are built to stand up under process pressures— 10 to 125 lbs. per sq. in. as used in industrial, chemical and textile manufacture and in many non-industrial processes, such as sterilizing in hospitals, cooking in hotels and drying in lumber kilns. Built to insure automatic, continuous and complete discharge of air and water of condensation. Webster "78" Traps have speeded up production in hundreds of different applications. Ask for Catalog B-1200.

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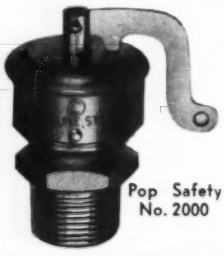
Branches in 60 principal U. S. Cities—Darling Bros., Ltd., Montreal, Canada

Experienced plumbers use it exclusively . . . because it wipes smoothly without addition of lead or tin! In cakes weighing about 4 pounds.

EAGLE wiping solder

THE EAGLE-PICHER LEAD COMPANY
CHICAGO · JOPLIN · CINCINNATI

No. 2010 Pop Safety Valve



Pop Safety
No. 2000

Two Valves for Heating Plant Protection

No. 2010 is precision machined, heavy brass castings except oil tempered steel spring which is Udylited. Corrosion proof—conforms to A. S. M. E. specifications. Always functions no matter how long idle. Closes securely due to spring pressure action on disc below seat. Operates at any angle. Ten or fifteen pounds pressure—specify which. Sizes ¾" to 3". Can be furnished in polished nickel, chrome, plate or enamel finish.

No. 2000—brass castings—best steel spring — conforms to A. S. M. E. specifications. State whether 10 lbs. or 15 lbs. is desired. Brush brass finish but can be had in nickel plate, chrome or enamel.

Write for Consolidated catalog for heating plant specialties.

CONSOLIDATED BRASS CO.
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Detroit, Mich.

ENGINEERS and HEATING CONTRACTORS

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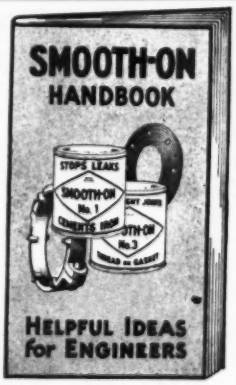
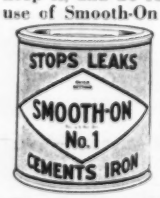


This compact booklet contains diagrams with instructions for avoiding much overtime labor, worry and expense on such jobs as the following:—Making tight new and stopping leakage at old screwed or flanged joints—Repairing boiler shells, tube sheets and headers — Stopping leaks at seams and rivets — Repairing engine and pump cylinders, cracked fittings, valve bodies, pump shells, economizers, heaters, condensers, steam kettles, etc. — Making emergency joints without fittings—Making water and oil-proof machine foundations, floors, etc.

You would be astonished at the speed, safety and ease of making Smooth-On repairs, and the dependability and permanence of all proper applications. Read this booklet, keep it, and be ready for the next emergency. Your first use of Smooth-On will prove it indispensable.



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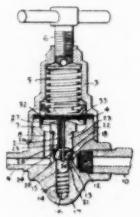
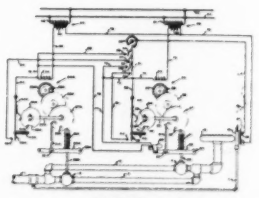
570 Communipaw Ave., Jersey City, N. J.

***Do it with* SMOOTH-ON**

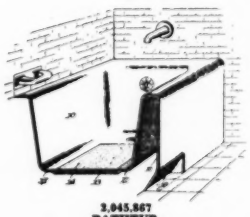
Plumbing

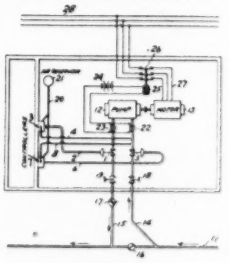
2,049,382. Pressure Regulator. George M. Deming, East Orange, N. J., assignor to Air Reduction Company, Incorporated, New York, N. Y., a corporation of New York.


2,049,382
PRESSURE REGULATOR


2,048,162
VALVE CONTROL SYSTEM

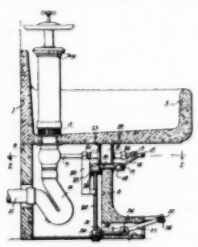
2,048,162. Valve Control System. John P. Kriechbaum, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Company, Minneapolis, Minn., a corporation of Del.

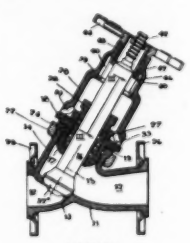

2,045,867
BATHTUB


2,049,233
CONTROL SYSTEM FOR PIPE LINES

2,045,867. Bathtub. Robert Mueller, Decatur, Ill.

2,049,233. Control System for Pipe Lines. Henry Thomas, Ridley Park, Pa., assignor to Sun Oil Company, Philadelphia, Pa., a corporation of New Jersey.


2,040,266
WASHFOUNTAIN

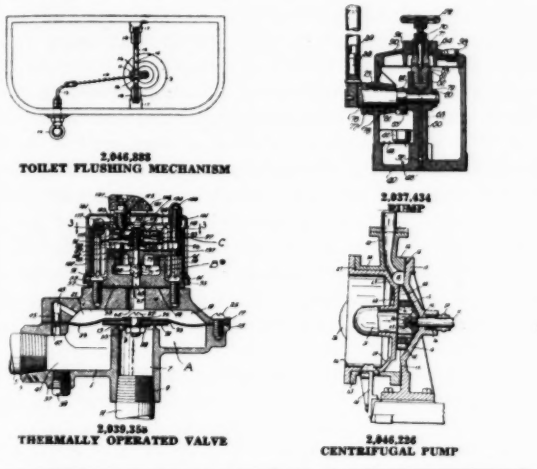

2,049,204
VALVE

2,040,266. Wash Fountain. Howard A. Mullett and Herman E. Heine, Milwaukee, Wis., assignors to Bradley Washfountain Company, Milwaukee, Wis., a corporation of Wisconsin.

2,049,204. Valve. Oystein Jacobsen, Dayton, Ohio, assignor to The Duriron Company, Inc., a corporation of New York.

2,046,888. Toilet Flushing Mechanism. Wayne C. Watt, Fort Wayne, Ind.

2,039,358. Thermally Operated Valve. John A. Spencer, Newtonville, Mass., assignor to General Plate Company, Attleboro, Mass., a corporation of Massachusetts.

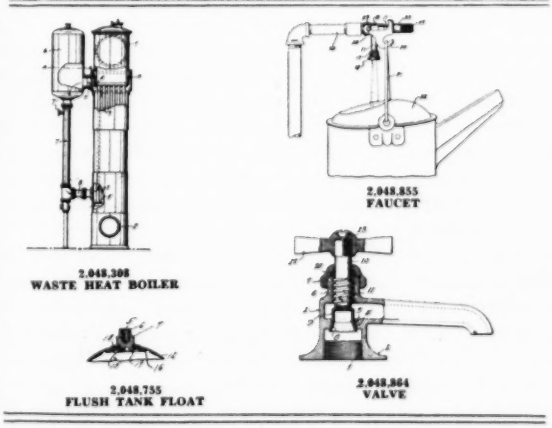


2,037,434. Pump. Edward M. Pfauser, Milwaukee, Wis., assignor to Blackhawk Mfg. Co., Milwaukee, Wis., a corporation of Wisconsin.

2,046,226. Centrifugal Pump. Hugh E. Weightman and Nathan Roach, Cleveland, Ohio, assignors to The Cleveland Brass Manufacturing Company, Cleveland, Ohio, a corporation of Ohio.

2,048,308. Waste Heat Boiler. Gustave Welter, New Haven, Conn., assignor to The Bigelow Company, New Haven, Conn., a corporation of Connecticut.

2,048,755. Flush Tank Float. Paul F. Reichert, deceased, late a resident of Toledo, Ohio, by Alethea R. Burgie, administratrix, Toledo, Ohio, assignor to The Reichert Float & Manufacturing Company, Toledo, Ohio, a corporation of Ohio.



2,048,855. Faucet. Arno A. Ewald, Oakfield, Wis., assignor to Romort Manufacturing Company, Oakfield, Wis., a corporation of Wisconsin.

2,048,864. Valve. Warren F. Heineman, Shorewood, Wis.

FEDDERS
Series 3
UNIT HEATERS

CAN'T COMMIT
SUICIDE

The wear and tear on Unit Heaters comes from INSIDE, not outside. Fedders Series 3 Unit Heaters provide full protection against the severe expansion stresses within the heating element and between the element and cabinet due to sudden wide temperature changes between low room temperature and steam.

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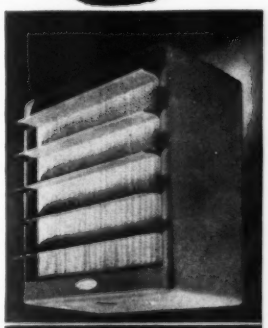
Pat. No. 1,970,105; 2,025,426



FEDDERS
MANUFACTURING COMPANY
57 Tonawanda Street Buffalo, N. Y.

THE VOTE-GETTER

People want soft water. They had the broom—and bought vacuum cleaners. They had ice-boxes—and bought electric refrigerators. They have hard water—and now they want a WATER SOFTENER.

There are ten times as many good reasons why the housewife should buy a Warlo Water Softener as there are for buying any other kind of household appliance you can think of. The field is immense—is still new—and offers you a wonderful opportunity. Get our dealer proposition and sales promotion plan.

WHAT SOFT WATER MEANS IN THE HOME

Saves half the soap.
Gets things cleaner.
Clothes last longer.
Better for skin and hair.
Dishes dry clear.
Prevents scale in pipes.
Saves fuel.
Better for drinking.

WHAT WARLO HAS TO OFFER

A simple softening unit.
Easy to install.
No servicing problems.
Strongly built.
Eleven models.
A price range to suit any home-owner.
Warlo can also supply various types of filters.

Warlo Corporation, 330 West 42nd St., New York, N. Y.

WARLO WATER SOFTENERS
are distributed by
CRANE CO.

THE NEW IDEA IN OIL BURNER SELLING

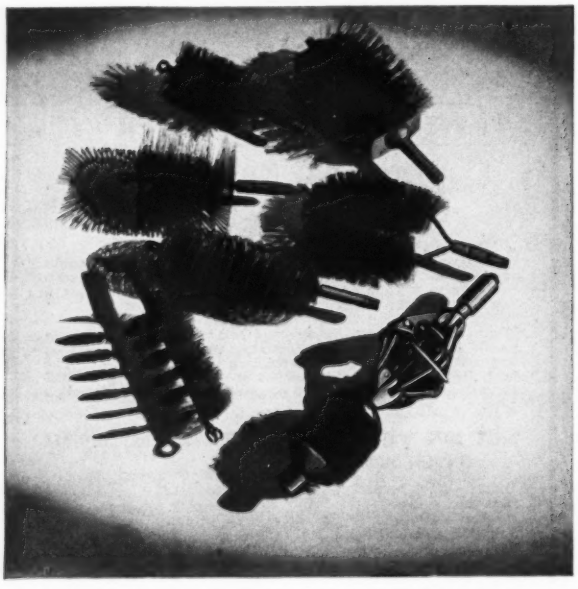
WE HAVEN'T HAD A MINUTE'S WORRY ABOUT HEATING SINCE WE PUT IN OUR SUPER-SAFE MASTER KRAFT OIL BURNER
"SUPER-SAFE"? THAT'S JUST WHAT WE'VE BEEN LOOKING FOR...
SUPER • SAFE
Master Kraft
THE ONLY OIL BURNER WITH
THE
BORKONTROL

ONE of the outstanding reasons for the success of MASTER KRAFT Oil Burner dealers this season is the confidence inspired by the phrase, "SUPER-SAFE."

1. The BORKONTROL (Pat. Pending)
2. The TRIPALATOR (Pat. Pending)
3. THERMO-OVERLOAD RELIEF SWITCH
4. VARIABLE CAPACITY MOTOR

HARVEY-WHIPPLE, Incorporated
525 Emery Street, SPRINGFIELD, MASS.

Made for Long Rugged Service



Boiler Tube Cleaners, Flue Brushes, Wire Heater Brushes, Handy Cleaner Brushes, Fire Brooms, Track Brooms.

Tempered Steel
The Worcester line is complete.
Catalog gladly sent upon request.

WORCESTER BRUSH and SCRAPER CO.
10 AUSTIN STREET -:- WORCESTER, MASS.

Legal—

(Continued from Page 85)

witness at least that the furnace had become worn out by ordinary wear and tear."

It is well established law that a plumbing or heating contractor is bound to fulfill the exact terms of a guarantee with respect to the quality of workmanship of the finished job. Also, it is well known that many states have enacted laws which require owners to file suit on a breached warranty within a specified period of time. Therefore, it is important to know that the date when such suit is required to be filed is computed from the time *it was finally determined that the work was defective* instead of from the date the guarantee was issued.

For instance, in a late case it was shown that a contractor entered into an agreement with an owner of an apartment building by the terms of which the former was to install a heating and ventilating plant in a new apartment building, according to attached plans and specifications, for the sum of $1760.

Four years later the apartment building owner filed suit against the contractor to recover damages alleging that the heating plant was insufficient in capacity to comply with the guarantee issued by the contractor. The apartment building owner introduced proof showing that his contentions were well founded, but the contractor attempted to avoid liability because the owner had failed to file suit in compliance with a state law which provides that suits on warranties must be filed within three years.

The owner of the building argued that since he had filed the suit within three years from the date when he finally determined that the heating plant did not comply with the guarantee, he was entitled to a favorable judgment.

APPLICATION TO CONSTRUCTION CONTRACTS

In view of these facts the lower court held the contractor liable in damages on the breached warranty.

It is well established that a plumbing and heating contractor may legally sell something he does not possess, and the buyer may compel the seller to obtain the article which he sold, or pay reasonable damages. The same law is applicable with respect to construction contracts. In other words, a contract is valid and enforceable by the terms of which a subcontractor for plumbing and heating equipment contracts to perform work for a principal contractor on a building for the construction of which the principal contractor has not yet obtained a contract.

For example, in another specific case it was disclosed that a general contractor believing that he would obtain a contract to construct a building made a contract with a subcontractor for the installation of plumbing and heating. The principal contractor was successful in obtaining the contract. However, for some reason, the subcontractor refused to install the plumbing and heating at the agreed price on the contention that the contract was void and unenforceable because when the owner had not awarded the contract to the principal contractor when the subcontract was made. The higher court held the subcontractor liable in damages.

(To be Continued)

Group Ads—

(Continued from page 67)

demands among home owners for the equipment which they want and need. By a cooperative movement such as this, in which each dealer shares a portion of the expense, which is small when divided between groups, they can sell equipment with a good profit. This organization sees in the program the only means of regaining the wide public confidence needed to restore sales, and put the independent dealer on an equal or better footing than now prevails in mass sales agencies.

Just what is the cooperative movement and program which is responsible for the success related in the foregoing? It is based on a cooperative advertising program which was carried on as a series of campaigns. The first campaign was from September 16 to October 31, 1935. The method and procedure was that a series of seven bulletins went out from the gas company to dealers. Cooperative advertising was done with the gas company paying a percentage of the cost.

DISTRIBUTORS AND MANUFACTURERS COOPERATE

A similar campaign ran from January 13 to February 29 of this year. Both distributors and manufacturers have cooperated with dealers in carrying on these campaigns by sponsoring the programs locally and contributing a portion of the advertising costs. Advertisements in the program have been run in neighborhood newspapers with a wide home coverage. These papers also have cooperated to the extent that they have helped form other cooperative groups.

Combined with such an advertising program have been cooking schools conducted in local theaters. Such schools were, in themselves, additional advertisements since they presented an opportunity of displaying the latest models of home equipment and appliances. The usual plan of these schools is to have them held under the sponsorship of a newspaper in cooperation with a utility company that in turn is cooperating with dealers.

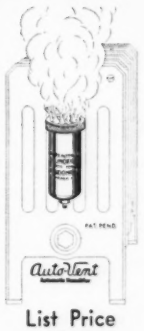
Quick Service—

(Continued from page 81)

same radiator system as before was used but it was necessary to change all the connections from the private steam plant to connect up with the city steam line. The necessary steam accessories had to be installed.

Within 24 hours city steam was cut into the motor company's large showroom, offices and shops. Hubert Drennen, president of the company, couldn't express his appreciation in words, so he took paid advertising space in the newspapers to announce that his "hat was off" to the Birmingham Electric Company and the Brown Plumbing Company.

Since the custom of some customers is to abuse plumbers for what they think is slowness, imagine the surprise of other contractors in Birmingham when they read this advertisement in the newspapers. They called Mr. Brown to congratulate him for his rapid service.



List Price $3.75

IT
HUMIDIFIES
AND
VENTS the RADIATOR

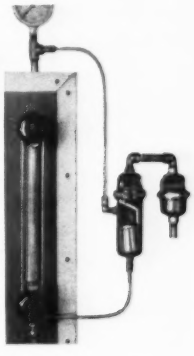
THE No. 95 Auto-Vent discharges one pint or more of water vapor into the room per heating hour.

It is adjustable, silent, longlife, small, simple and attractive. Size 1⅞"x4¼". Screws into air valve opening of Radiator.

Money Back Guarantee

The Improved
WATER-BOY SAFETY FEEDER
Makes Automatic Firing Really Automatic

1. Valve and valve seat and valve mechanism made of Nickel Silver.
2. Monel metal screen.
3. Built entirely of Nickel Silver, Brass and Copper.
4. Easily repaired.
5. Low cost. List price $12.00.
6. Money back guarantee.



Write for Circular H

180 N. Wacker Dr. **MAID-O'-MIST, Inc.** Chicago, Ill.

Manufacturers of
Water Feeders, Low Water Cut-Outs, Air Vents, Humidifiers for Warm Air Furnaces, Midget Ball Cocks and Other Air Conditioning Specialties

METAPHRAM
Type A2
for small low pressure plants — gas, oil or coal fired.

METAPHRAM

METAPHRAM Gradual Control
covers the entire range of domestic hot water and low pressure boilers and tank heaters, either gas, oil, or coal fired.
Full stock carried in New York, 210 E. 45th St.

Descriptive Bulletins on Request

NATIONAL REGULATOR CO.
2317 KNOX AVENUE CHICAGO

Proper **HUMIDITY** *is essential to Proper* **AIR CONDITIONING**

That's why SAVO Air Moisteners make a definite contribution toward air conditioning a home. They make it possible to quickly and easily bring the humidity to proper level.

SAVO Air Moisteners involve no installation or maintenance expense and a home can be SAVO-equipped for from $10.00 to $20.00.

SAVO Air Moisteners are made to fit coils of radiator perfectly. They are made of Armco Ingot rust-resisting steel. Don't take chances on inferior imitations. You will find SAVO a profitable item.

Write for prices and discounts, together with FREE literature.

SAVO MANUFACTURING CO.
1400 MERCHANDISE MART, 222 NORTH BANK DRIVE, CHICAGO

SAVO AIR MOISTENER

A standard specification—

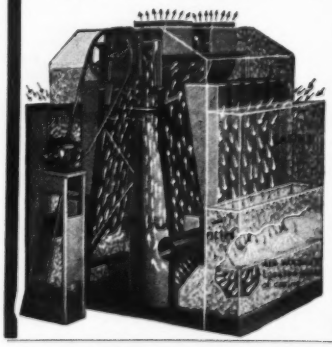
FRETZ NIPPLES

DEVLIN FITTINGS

Made only by
Thomas Devlin Mfg. Co., Inc.
Burlington, New Jersey

ASK ANY RECOGNIZED JOBBER

Dailaire **is Time and Field Tested**



No other modern up to the minute efficient heating and air conditioning system has as many years of field service as Dailaire.

Therefore, every Dailaire feature is field tested and a customer accepted one.

MR. DEALER — Now is your opportunity to ally your organization with ours for better and more efficient heating and better profits for yourself.

Write for full data.

Dail Steel Products Co.
1350 Main St.
Lansing • Michigan

STOP going back!
to repair weak joints made with fireclay

DURA-STIX
TRADE MARK
FIREBRICK CEMENT

provides a strong bond between the firebricks. Once the firebrick lining is bonded with DURA-STIX, there is no waste of time — no going back to rebuild the firepot.

IT STICKS TO THE BRICKS

Send for Bulletin 100

KEYSTONE REFRACTORIES CO.
120 LIBERTY STREET NEW YORK

Mr. Brown has been in the contracting business in Birmingham for seventeen years, during that time handling some of the biggest jobs in the city. In 1935 Mr. Brown served as secretary-treasurer of the Alabama Plumbing Examination Board. Several years ago he served a term as assistant plumbing inspector of Birmingham. He started out as a journeyman in 1907.

"In my long experience I find that the public likes nothing better than speed in handling plumbing and heating jobs," said Mr. Brown. "We find that we save time and money by insisting that men take along the necessary tools and parts needed for a job. Also, we find we can save a lot of time by directing our men carefully from the office."

Humidity—

(Continued from Page 70)

the difference between the amount supplied by the house itself (21.4 gr.) and that possible to carry in the house without condensation as represented by the topmost curve. The area in which this will occur begins at 15 deg. Fahr. above zero and runs to 55 deg. Fahr. above zero between which limits artificial humidifying up to a maximum of 14 gr. per lb. may be supplied without resulting in condensation.

From the curves it would appear that any humidifier for household use would only have to add a maximum of 14 gr. per pound of air and that any humidifier which would do this would do all that any humidifier could do regardless of its size or capacity. But if we agree with all this, where does it leave us? It at least leaves us with a basis on which to determine the amount of moisture required if the number of cubic feet per hour to be conditioned can be approximated.

If a small bungalow is assumed with one story height and 25 ft. by 30 ft. in size and with an average air change of 1¼ per hour the cubic feet of air per hour to be humidified will amount to

$$25 \text{ ft.} \times 30 \text{ ft.} \times 9 \text{ ft.} \times 1\tfrac{1}{4} \text{ or } 8440 \text{ c.f.h.}$$

while a two story house of similar dimensions will have an hourly air infiltration of twice as much or 16,880 c.f.h. A large house of two stories 25 ft. by 50 ft., similarly will result in an air change of 28,125 c.f.h. The number of pounds of air per hour to be treated may be obtained by dividing the cubic feet by 13 since there are about 13 cu. ft. of air to a pound at 69 deg. Fahr. Table III gives the schedule for the three sizes of house, the pounds of air per hour, and the pounds of water per hour for each house based on adding 14 grains to each pound of air.

This number of pounds of water is obtained by the formula

Lb. of air $\times$ 14 gr. / 7,000 gr. equals lb. of water

and this will be seen to result in 0.65 lb. of water per hour for the bungalow, 1.3 lb. per hour for the small house and 2.16 lb. per hour for the large house. In Fig. 3 these results have been plotted so the approximate amount of water required per hour for any number of cubic feet of space to be conditioned up to 36,000 cu. ft. is given both in pounds per hour or in fractions of a gallon per hour.

Robinson-Patman—

(Continued from August Issue)

"Sec. 2. That nothing herein contained shall affect rights of action arising, or litigation pending, or orders of the Federal Trade Commission issued and in effect or pending on review, based on section 2 of said Act of October 15, 1914, prior to the effective date of this amendatory Act: Provided, That where, prior to the effective date of this amendatory Act, the Federal Trade Commission has issued an order requiring any person to cease and desist from a violation of section 2 of said Act of October 15, 1914, and such order is pending on review or is in effect, either as issued or as affirmed or modified by a court of competent jurisdiction and the Commission shall have reason to believe that such person has committed, used or carried on, since the effective date of this amendatory Act, or is committing, using or carrying on, any act, practice or method in violation of any of the provisions of said section 2 as amended by this Act, it may reopen such original proceeding and may issue and serve upon such person its complaint, supplementary to the original complaint, stating its charges in that respect. Thereupon the same proceedings shall be had upon such supplementary complaint as provided in section 11 of said Act of October 15, 1914. If upon such hearing the Commission shall be of the opinion that any act, practice, or method charged in said supplementary complaint has been committed, used, or carried on since the effective date of this amendatory Act, or is being committed, used or carried on, in violation of said section 2 as amended by this Act, it shall make a report in writing in which it shall state its findings as to the facts and shall issue and serve upon such person its order modifying or amending its original order to include any additional violations of law so found. Thereafter the provisions of section 11 of said Act of October 15, 1914, as to review and enforcement of orders of the Commission shall in all things apply to such modified or amended order. If upon review as provided in said section 11 the court shall set aside, such modified or amended order, the original order shall not be affected thereby, but it shall be and remain in force and effect as fully and to the same extent as if such supplementary proceedings had not been taken.

"Sec. 3. It shall be unlawful for any person engaged in commerce, in the course of such commerce, to be a party to, or assist in, any transaction of sale, or contract to sell, which discriminates to his knowledge against competitors of the purchaser, in that, any discount, rebate, allowance, or advertising service charge is granted to the purchaser over and above any discount, rebate, allowance, or advertising service charge available at the time of such transaction to said competitors in respect of a sale of goods of like grade, quality, and quantity; to sell, or contract to sell, goods in any part of the United States at prices lower than those exacted by said person elsewhere in the United States for the purpose of destroying competition or eliminating a competitor in such part of the United States; or, to sell, or contract to sell goods at unreasonably low prices for the purpose of destroying competition or eliminating a competitor.

NYE TOOLS

"The Kind You Swear By and Never At"

NEW "TRIPLEX" STOCK

THE tool illustrated is presented in response to popular demand for a lightweight combination stock for use with solid dies.

Without sacrificing the durability of the stock, numerous openings have been provided, not only to prevent chip accumulation, but to allow the operator to apply oil freely on the pipe.

Furnished with Nye No. 1 skip-tooth solid dies in two combinations—⅜" to ¾" and ½" to 1".
Net Price complete, each.....$9.00

The NYE Tool & Machine Works
4120-30 Fullerton Avenue, Chicago, Ill., U. S. A.

BURKS

Leadership
in
QUALITY & PERFORMANCE
Again Scores

BURKS-AUTOMATIC
IN 4 MONTHS
HAS BECOME
THE WORLD'S
MOST POPULAR
WATER
SYSTEM

BURKS-AUTOMATIC
HAS EVERYTHING

GREATER CAPACITY | MORE EXCLUSIVE FEATURES | NEW LOW PRICES

DECATUR PUMP COMPANY
DECATUR, ILLINOIS.

Liquidation Sale at Auction

Large Stock of

PLUMBING AND HEATING SUPPLIES AND MACHINERY AND EQUIPMENT OF

E. F. KEATING COMPANY

452 Water Street New York

Tuesday & Wednesday, September 15 & 16, 1936

At 10 A. M. Each Day, Daylight Time, on the Premises

Stock. **200 Tons Standard Pipe Fittings,** high and low pressure, steam, water, air and gas, including unions, flanges, 45 to 90° ells, T's, nipples, crosses, reducers, plugs, caps, etc., in brass, steel, wrought, cast and malleable iron, galvanized and plain black. Large lot drainage fittings, quantities brass and iron body, gate and globe valves for high and low pressure from ¼ to 12 inches. Brass and nickel-plated radiator and angle valves, safety and check valves, injectors, pressure steam and vacuum gauges, brass and copper pipe, tubing, lead pipe, traps, brass and nickel-plated bibbs, stop and pet cocks; stock of varied basin, sink, bath tub, wash tray and hopper fittings; galvanized boilers, etc.

Pipe Shop Machinery and Equipment. 13 Landis & Saunders ¼ to 12-in. pipe threading machines, belt and direct motor drive. Pipe cutting off machines; Lodge & Davis and Prentiss heavy duty engine lathes, 36-in. vertical boring mill, Napier electric metal band saw cutting machine, power-geared 6-in. shears, Lodge & Davis and Saunders 36- and 12-in. drill presses, 16-in. machine shaper, emery grinder, chain hoists, electric motors and generator, 100 H. P. Corliss type steam engine, pumps, small tools, shafting, belting, etc.

Office Furniture. Oak and walnut sanitary desks, chairs, typewriters, adding machines, calculators, check writers; file index and stationery cabinets; safes, lockers, Dodge truck, Chevrolet Sedan, etc.

By Order of E. F. KEATING COMPANY

and with consent of Creditors' Committee

Descriptive Catalogs Upon Application to

Samuel T. Freeman & Co., *Auctioneers*

1808-10 Chestnut St. PHILADELPHIA | 27 William St. NEW YORK | 80 Federal St. BOSTON

Making Leaks Behave
KEY GRAPHITE PASTE
Leaky pipe thread joints and gasket connections can cause a lot of grief. But, if you really want to make them leak-proof . . . use Key Graphite Paste. It is the perfect sealing compound for making leak-proof pipe thread and gasket joints on lines carrying steam, gasoline, kerosene, creosote, tar, hot vaseline, acid, air, etc. Sold through reputable jobbers everywhere, or we will gladly send you a test sample.
KEY COMPANY
2661 McCASLAND AVENUE EAST ST. LOUIS, ILL.

"Any person violating any of the provisions of this section shall, upon conviction thereof, be fined not more than $5,000 or imprisoned not more than one year, or both.

"Sec. 4. Nothing in this Act shall prevent a cooperative association from returning to its members, producers, or consumers the whole, or any part of, the net earnings or surplus resulting from its trading operations, in proportion to their purchases or sales from, to, or through the association.

"Approved, June 19, 1936."

Customers—

(Continued from Page 94)

appreciation of the best, and in this regard Mr. Delehant has a corollary to his foregoing statement:

"In order to be fair, one must avoid bad debts. I treat all my customers the same. It is not fair to make up losses on one job by overcharging another man."

Many of Mr. Delehant's calls now come through real estate firms and he believes that being prompt in serving these companies is the most important element in keeping their business.

In looking back, Mr. Delehant is "not so sure it was a bad idea" to remain where he started. So many of his friends, who moved out as the neighborhood declined, have had to pay higher rents and practically start over in a new neighborhood. Some of them were badly hit by the late depression. Then too, there is still some good business in the old district, and where Mr. Delehant knows the people, or in cases where he is certain that they can pay he will do the work. "Many a job I've turned down when I couldn't see any money in it," he remarked. And then, too, everyone knows just where they can find John J. Delehant.

So today he is still doing business—at 627 W. 47th St., one block from where he started almost forty-one years ago.

"Yet, just the other day," said he, "a daughter of one of the 'old timers' called me to make some repairs in her Beverly Hills home. For thirty years I've handled her father's estate—and maybe I haven't done so bad. I own this building, and I have property across the street. It's well rented and I can sit here and watch it—lived in it myself until six years ago when I moved out to 67th and Union Ave. You know, this last depression was bad, but I'm still here and manage to keep five or six plumbers busy all the time. Being a plumber is just like being a dentist. If you do good work and you're fair, folks will remember you all right."

Sales—

(Continued from Page 74)

had you planned on getting enough space for another bathroom?"

And so they go upstairs and the planning begins. A shower stall here, closed up with a watertight door to prevent water from splashing all over the room. Then a tub built in there, and so forth. For the old bathroom

he suggests shower fixtures above the tub, with a glass shield or new shower curtains to keep water from the floor and to give the room the modern touch. Slowly, but surely, the idea takes form in the prospect's mind, eventually to become a reality.

"It isn't just the effort to sell that produces business," claims Zimmerman. "I believe that sales come as a result of showing the customer that he needs what I have to sell. If I can't make him realize that need first of all, then I can be pretty sure that he will not part with his money."

Oil—

(Continued from Page 72)

leaks around the firing and flue doors, the dealer filled these doors with a mixture of asbestos and cement to reduce heat losses and to lessen flame sounds.

A draft regulator was installed in the base of the chimney to which the three boilers were connected, to eliminate inefficiencies due to draft variations.

Of course, the increased firing rate already mentioned was intended to increase comfort. But the dealer also installed a modern system of temperature controls, including a day and a night thermostat, a relay to permit these to control the 110 volt lines feeding the burners, and an electric clock to furnish, automatically, reduced temperatures from 11 p. m. to 6:30 a. m. Combination pressure and low water level controls also were installed. The contractor-dealer explained this: "In past years the absence of low water level protectors caused no trouble, but I didn't want to take a chance while I was responsible so I strenuously recommended low water cutouts. My customer understood my argument and readily agreed to it."

One more positive step was taken to reduce fuel bills to a minimum: the job was converted from No. 2 oil to No. 4 oil, which the owner obtained for ½c less per gallon. To permit the use of the heavier grade, a 100 mesh strainer having an area of 28 sq. in. was installed in the suction line of each burner, atomizing pressures were increased from 75 to 130 lb., and a nozzle built for No. 4 oil was installed in each burner.

Results have proved that this contractor-dealer handled his responsibility well. There was but one service call last year. That was caused by a leaky pump gland. Formerly, 40,000 gallons of 6c oil were used yearly, giving a fuel bill of $2,400. Now the owner saves $640 a year, because only 32,000 gallons of 5½c oil are used in a year. Beyond all doubts, the amount required to put the job in topnotch condition has been proved well spent from the standpoint of both investment and satisfaction.

"Details count," concludes this contractor-dealer after reciting these experiences. "I guess I might have omitted the draft regulator, or the low level water controls, or the new thermostats, or the new fireboxes—but if I had omitted any one of these I couldn't feel confident that the job was 100 per cent up to par. When I imagine what my customer would say to me if his job puffed again, after he paid me to fix it, I'm just awful glad I did everything possible to make it perfect. I pay a lot of attention to little details. Then the big things just naturally take care of themselves."

PARMELEE for PUSH NIPPLES modern and obsolete

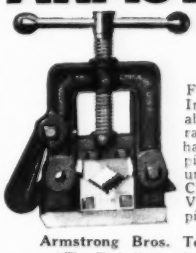
Quick Service

When you want replacement Push Nipples quickly—think of Parmelee. Orders shipped the day received. Complete stock. Push Nipples to fit any style, type or size of cast iron radiation ever made in this country. *Exact fit guaranteed.* Send sample or sketch giving accurate dimensions. Rust-resistant finish if desired. Also boiler nipples.

PARMELEE MANUFACTURING CORP.
P. O. Box 122 Frankfort, New York

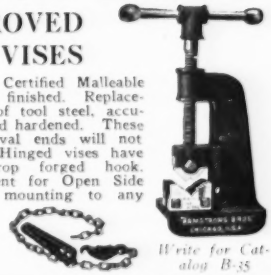
Look for the Arm-and-Hammer

ARMSTRONG BROS.



IMPROVED PIPE VISES

Frames are of Certified Malleable Iron, cadmium finished. Replaceable jaws are of tool steel, accurately milled and hardened. These handles with oval ends will not pinch hands. Hinged vises have unbreakable drop forged hook. Chain attachment for Open Side Vises permits mounting to any pillar or post.



Armstrong Bros. Tool Co.
"The Tool Holder People"
323 N. Francisco Ave., Chicago, U. S. A.

Write for Catalog B-35

E-Z For Efficiency..Strength . . Durability . . Economy

E-Z RADIATOR HANGER

Adjustable horizontally and vertically. Provides easy and quick installation for wall-hung radiators. Used by leading architects, contractors and U. S. Government because they fulfill every requirement.

E-Z SEVEN-IN-ONE CONCRETE INSERT

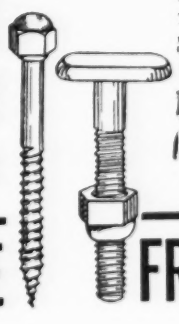
Only one size is needed for all size pipe hangers, whether supported by pipe or rod. Adjustable with play for expansion.

• *Write for Details*

HEALY-RUFF COMPANY, 770 Hampden Ave., St. Paul, Minn.
Also Manufacturers of E-Z Lavatory Hangers

HINDLEY MFG. CO.
VALLEY FALLS, R. I.

IF IT'S A PLUMBING SPECIALTY



No matter what your needs might be, if it's a plumbing specialty you'll find it in the complete HINDLEY Line. You'll find it PAYS to keep HINDLEY'S Plumbers' Specialties always at hand.

TAKE FROM HINDLEY

DOUBLE *Lavatory* **FAUCET**

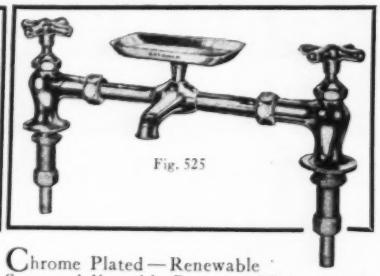


Fig. 525

A Fine Fixture at Moderate Price

Chrome Plated—Renewable Seats—Adjustable Centers. High spout to comply with Back Siphonage Codes. Sold through Jobbers.

H. B. SHERMAN MFG. CO., BATTLE CREEK, MICH.

The ADJUSTO

The New Departure in Direct Water Heaters and Boosters

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Electrolysis—

(Continued from Page 78)

continued, and ultimately will have its material deposited on top of the plating metal as a plating on top of this metal. In other words the reversal of the current flow simply reverses the plating process as might be expected.

In alternating currents as the name indicates the current flow is constantly changed or alternated. Oscillation of flow might be a good term to use to describe this. These oscillations occur many times in a single second and so there is no continued flow in one direction and we cannot plate by alternating current because the effect is the same as constantly reversing the connections back and forth making the anode the cathode, and vice versa. As a result if any metal is deposited at all on the object it is immediately removed and carried back to the metal used for plating.

From this it will be seen that, if alternating currents introduce electrolysis at all, they immediately and in the fraction of a second supply a remedy for the action and hence electrolysis by alternating currents is practically unknown.

HEATING DUE TO ELECTRIC CURRENT

For these reasons, electrolytic action on the piping installed in buildings may be said to be very rare although occasionally cases are known where stray electric currents have caused troubles which are termed "electrolysis" but which really are not electrolysis at all but simply are the results of the flow of currents which do not decompose the pipe. Instances are known of pipe hangers becoming red hot and even steel connections to columns forming the structural frame of the building but this is not true electrolysis and is only the heating effect which takes place in all conductors when a current of electricity passes through them. Cables heat, fuses blow, electric switches often are melted, usually due to overloading or poor contacts, but these in themselves are not true electrolysis which according to the definition must be accompanied with the decomposition (not melting) of the metal.

Drafts—

(Continued from Page 84)

in cafeteries and restaurants and it has always been satisfactory. I hope that it will solve your problem.

Very truly yours,
Earl Brown.

Canton, Kansas.
March 26, 1936.

Dear Mr. Brown:

Your letter of March 18 was received during a cold spell, so I hurried over to the Barnes cafeteria and told Mr. Barnes the whole story. He is quick to grasp mechanical things, and soon understood, after I showed him your unit heater sketch (Fig. 3), that the drafts were being caused by the kitchen fan, which is, by the way, a 985 c.f.m. fan. Being a very frugal person, he suggested saving some money by omitting the fan. Then

I showed him your first sketch (Fig. 2), and read that part of the letter to him where you advised against stopping the fan. Soon he gave me an order to install a heater over the vestibule as you suggested.

Two days later I installed the heater, and it has been in use ever since. Barnes is as tickled as a child with a new toy. Every day he tinkers with the deflectors, but the best results seem to be had when about one-third of them point down and the rest point straight ahead. One day he tried full recirculation when the kitchen fan was running. Then he tried partial recirculation. In both cases the stream of hot air which is deflected to the floor broke up some of the drafts caused by the inrush of cold air, but the customers and the cashier were soon complaining of drafts on their feet. Now he is satisfied that it is not wasteful to introduce the full volume of outdoor air.

Mr. Barnes lets the temperature of his dining room drop to as low as 40 deg. Fahr. at night. He was delighted to find that he can heat his dining room very quickly by operating the fan at full speed and recirculating.

I appreciate the detailed instructions which you sent.

By the way, Barnes asked me if he could use the fan, without steam in the system to bring in outdoor air in the cool part of mornings and evenings for cooling in summer. I told him that I saw no reason why he shouldn't.

I thank you very much for your advice.

Yours very truly,
Ralph O'Brien.

March 28, 1936.

Dear Mr. O'Brien:

I am glad to learn that your installation in the Barnes cafeteria has been so successful.

There is no reason why Mr. Barnes can not use the heater fan to introduce cool outdoor air in summer. Of course he will probably have to run the fan at slow speed when the dining room is in use. However, other restaurant proprietors who have installed a heater under similar conditions have found that they can start out with a cool dining room if they will run their fans at high speed (with the outdoor damper open) for an hour or two early in the morning before the outdoor temperature soars.

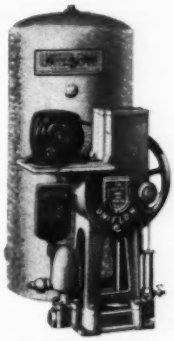
Yours truly,
Earl Brown.

Counselor—

(Continued from Page 78)

he sucked clean water through a straw or a hollow reed or made sounds he called music. It took a different need, however, to develop the principle involved into a practical working unit which could be intelligently applied to varying situations. Men used ditches and open channels for conveying water for centuries before they found serious need for a better medium. It was when man began to build cities and curiously it was sewage that produced the serious problem which was so satisfactorily solved.

"There are three problems which community life always presents. One is water supply; the second is adequate facilities for obtaining food; and third disposal of



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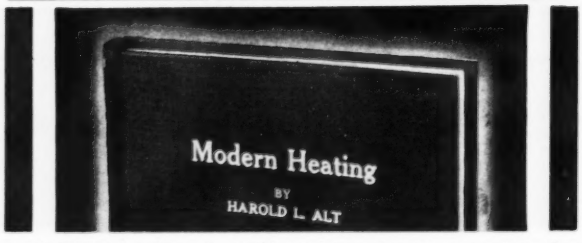

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waste. It was the latter that gave the motive for inventing pipe. Water they could carry or flow in ditches. Food was solid and bulky; but sewage must be disposed of, and in hot countries open ditches were a constant menace to health and comfort. The Temple of King Minos at Cnosses in the Island of Crete presents an even more highly developed sewage system, with a primitive type of flushing toilet and flap valve to prevent backflow of sewer gas. It was estimated that this temple was built about 3000 B. C. The oldest pieces of metallic pipe that have yet been discovered dated back to before 2700 B. C. These were made of beaten sheets of copper. Two thousand years later the Greeks and Romans developed the manufacture of lead pipe for conveying water. Wood pipe made of logs hollowed out came into use in northern countries, notably England and later America, but not until the sixteenth century A. D. did cast iron pipe appear in Europe.

OSBORNE METHOD

"In 1812 Osborne invented the first method for manufacturing long wrought iron tubes. His principle is in use today. Watts steam engine did for the human race what the sail had done five thousand years ago, but without pipe and valves the steam engine and internal combustion engine would not have been possible.

"The ancients had little trouble in controlling the flow through their sewage lines. Their flush system consisted of a large earthen vessel and a dipper. The only valves they knew were earthen stoppers covered with leather. The first flat valve was discovered in the Temple of Minos. During the fifteenth century B. C. the Greeks created the first real valve. These were used to control the flow of water in temple fountains. From the Greek water cock to the modern 1500 pound steel gate valve is a long jump—twenty-four hundred years. Many pieces of apparatus built for special purposes and using the basic principles of one of these valves as part thereof have been called valves, but in the strict sense of the word this is not correct. The word "valve" comes from the Latin "valva," meaning the folding of a door.

"Today we transport such a great variety of materials by means of pipe lines that it would be almost impossible to list them all. Steam up to pressures of 3,200 pounds, water at 7,000 pounds pressure, oil at 1,500 pounds, gases at 2,500 pounds, chemicals of every description, food products, paints, varnishes, grains, and the most important, sewage. A map of pipe lines in the United States looks like a railroad map. Metallic pipe has been made as fine as a hair, while the piping of the Boulder Dam is over thirty feet in diameter; $40,000.00 per foot is what it cost them to construct that pipe. Our cities are honey-combed from end to end by a mass of piping of every description and size. Our factories, office buildings, and our fine homes are net works of piping. Countless miles of it are found in every moderately sized city. We could not exist at all except for the use of this universal vehicle for the transporation of our vital necessity. Every one of these countless pipe lines is a complete system in itself. They are integral units in the fabrication of our industrial and social structure, and have only duties to perform, the carrying of commodities from one place to another. Only good, efficient, safe, well designed piping, properly installed by qualified men,

is the proper medium to carry the life blood of industry.

"The installation and maintenance of these pipe lines for ventilation, refrigeration, sewage, and waste disposal, water systems, gas systems, all are the duties of the plumber, and upon his shoulders rest the health and safety of the people in the community he serves.

"It has been the task of the plumbing and heating industry to convert wells into water systems, open fire places into heating systems, and wood tubs into beautiful bathrooms, yet you have never seen a statue built in honor of a plumber.

"The plumber generally is considered fair game by all the comic strip artists, and mostly he is pictured as a fat man with a bottle nose, wearing a black machinist's cap, smoking a pipe, slightly more than plain dumb, and with absolutely no sense of humor. The comic strip artists have been doing the same to the Sotchman for years without any harm and it may be considered free advertising.

CONCLUSION

"I hope my remarks have helped to create a better impression in your mind as to a plumber's place in the general scheme of things. If there are any doubts still in your mind regarding our usefulness, ask the man whose house has been flooded by a leaky pipe, or the fellow who wakes up with a choky feeling in a gas-filled apartment, or the man who has to tramp through snow to draw his water from a well, or the poor man who has to take his bath in the doubtful privacy of his kitchen. There is one set of valves we cannot fix and those are the valves of the heart, but we will get around to it if you will give us time. I hope that my remarks have convinced you of the work we are doing. If so, the next time you meet your plumber, grasp his hand and with tears in your eyes, say, 'Thanks, buddy.' But be sure he has not got a blow torch in his hand at the time. If he has, with the shock to his feelings and everything, you might be burned up more than he would be."

Practical Plumbing—

(Continued from Page 88)

normal firing conditions. Capacities may be checked by multiplying the grate area in sq. ft., by 6 to 8 lb. of coal with about 8,000 Btu. per lb. transmitted to the water. The combustion rate is somewhat dependent on the chimney draft and usually is taken at 6 lb. on small heaters up to 8 lb. on larger heaters. By this method the Btu. received in the water from a heater with 1½ sq. ft. of grate area would be

1½ sq. ft. × 6 lb. × 8,000 Btu. or 72,000 Btu. and this would heat per hour

72,000 Btu. / (8⅓ × 100 degrees) or about 85 g.p.h.

When connected up with a storage tank the capacity of the heater most often is made sufficient to heat the tank in about three hours. Thus—in the previous case—the heater ordinarily would be considered as large enough to attach to a storage tank of

85 gal. × 3 or 255 gal.

The capacity of oil burning heaters usually is deter-

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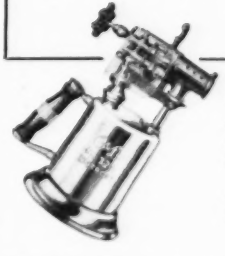

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mined by the amount of heating surface in combination with the amount of oil burned under the heater. When the heating surface is adequate the Btu. delivered will be about

Lb. of Oil per hr. × Btu. per lb. of Oil × Efficiency, and the heating surface should be around one sq. ft. for

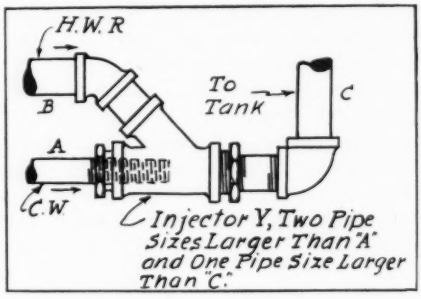

Fig. 13—The combined line should be the same size as the supply pipe to the building

every 3,300 Btu. to be transmitted into the water every hour. Thus the size of an oil-burning heater for hot water to have a capacity to heat 600 gal. per hour from 50 deg. Fahr. to 150 deg. Fahr. would be

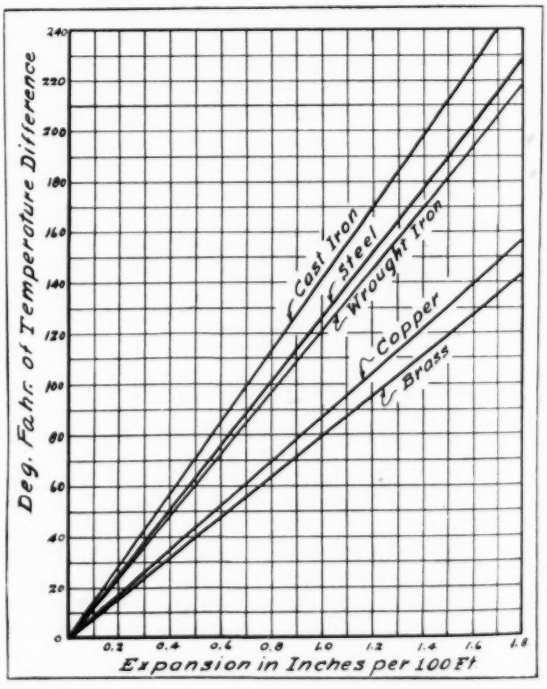

Fig. 14—These curves show the expansion of pipe of different metals at different temperatures

600 gal. × 8⅓ lb. × (150 deg. Fahr. minus 50 deg. Fahr.) or 500,000 Btu., the amount of heat required and the heating surface may be calculated as approximately

500,000 Btu. / 3,300 Btu. or 150 plus sq. ft.

Gas-fired hot water heaters are of two types, the instantaneous type, which heats the water as it flows through the heater, and the storage type, which is designed to maintain a certain amount of hot water in a storage tank at a given temperature. In the *instantaneous* type the gas is turned on and off by a reduction and increase in the water pressure on the line at the heater, which change in pressure is caused by the opening and closing of a hot water faucet anywhere on the system. A throttle valve often is used at the heater and is partially closed so that this change in pressure will be intensified to a point where it is sufficient to operate the gas valve. Gas is ignited by a pilot light which is kept burning constantly. They must be used on dead-

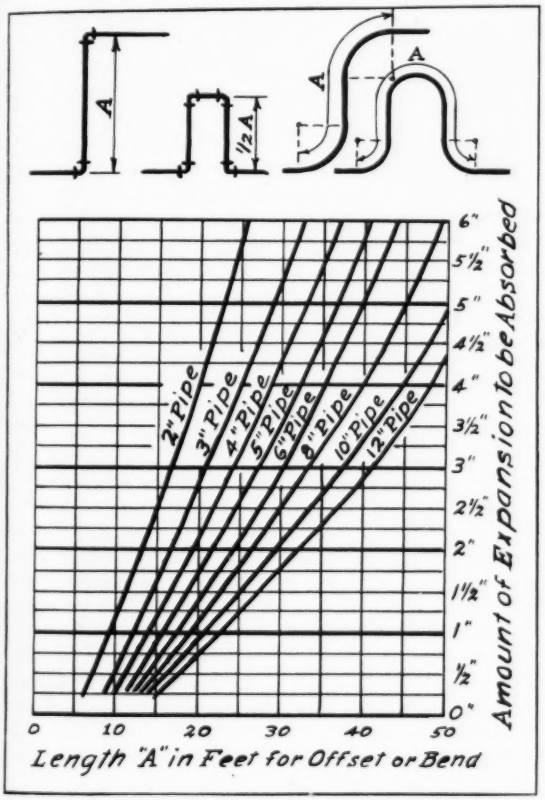

Fig. 15—The approximate amount of pipe required to absorb expansion in steel and wrought iron lines is indicated by this chart

end hot water systems and cannot maintain any circulation.

The *storage* type has the gas controlled by a thermostat located in the storage tank and also is ignited by a pilot light whenever the water temperature in the tank falls below that for which the thermostat is set. This type of gas heater may be applied to circulating systems.

Care should be taken in selecting gas heaters to see whether the capacities are listed for a 50 degree temperature rise in the water or for a 100 degree rise; also whether the rating is the amount of water heated in one, two or three hours time.

Gas consumption for gas water heaters may be ap-

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proximated by using 450 Btu. per cu. ft. for manufactured gas and 1,000 Btu. per cu. ft. for natural gas. Some allowance must be made for radiation losses on the tank when one is used and on the pipe system.

Example: What number of cu. ft. of gas will be required to heat 300 gal. of water through a 50 degree temperature rise using city gas?

Solution:

300 gal. × 8⅓ lb. × 50 degrees equals 125,000 Btu. required.

125,000 Btu. / (450 Btu. × 0.80) equals 347 cu. ft., if it is assumed that the water heater is 80 per cent efficient, and the same problem using natural gas would result in 125,000 / (1,000 Btu. × 0.80) equals 156 cu. ft. To this must be added the tank and pipe losses which vary with each installation.

Steam coil heaters vary from the simple tank with a loop of steam pipe up to the multitube heaters, in which a large number of tubes are connected into heaters or chambers. It requires approximately 67 sq. ft. of heating surface per 1,000 gal. of water heated per hr. through a rise of 100 degrees and this includes an ample allowance for fouling of the heating surface as time goes by.

Steam consumption in this type of heater runs about a pound of steam per gallon of water heated, which ratio is arrived at in the following manner:

"Do ye ken the fixing of bag pipes?"*

One gallon of water weighs about 8⅓ lb. and 8⅓ lb. of water heated 100 degrees requires

8⅓ × 100 degrees or 833 Btu.

while a pound of steam when condensed supplies between 1,000 and 1,100 Btu. If the radiation from the tank is assumed as in the neighborhood of 25 per cent, this makes the total heat required to heat a gallon of water

833 Btu. for the water
208 Btu. for tank losses

1,041 Btu. total required

which checks very closely with the amount of heat received from condensing a pound of steam.

The steam *boiler load* for heating water through a 100 degree temperature rise is roughly 3½ sq. ft. of equivalent direct radiation (edr.) per gallon heated as will be seen by the fact that

3½ sq. ft. × 240 Btu. equals 840 Btu.

and it already has been calculated that to heat a gallon of water 100 degrees requires about 833 Btu. If it is desired to include the tank losses, then about 4 sq. ft. should be allowed as

4 sq. ft. × 240 Btu. equals 960 Btu.

The term indirect hot water heaters is applied to devices attached to the side of a heating boiler, most frequently below the water line and with circulating connections between the boiler and the indirect heater and between the indirect heater and the hot water storage tank. It is constructed with a shell and contains a coil. The boiler water circulates through the shell and around the outside of the coil, while the water from the tank to be heated circulates through the coil. In this way there is *no mixture between the boiler water and the domestic water* each being separated from the other by the thickness of the tube, but there is an interchange of heat between the two liquids the boiler water being cooled by contact with the cooler coil and the water inside of the coil being heated by contact with the warmer interior surface of the coil.

Indirect heaters require a boiler temperature of water from 160 deg. Fahr. to 180 deg. Fahr. in order to function satisfactorily. For this reason they are not suited for application to hot water heating boilers where the boiler temperature will be very low on mild days. However, certain hot water heating systems are on the market whereby the boiler temperature may be kept high at all times and circulation to the radiators only takes place when the room thermostat calls for heat in the radiators.

INSTALLATION OF INDIRECT HEATERS

Indirect heaters should not be installed above the water line of the steam boiler except in cases where a constant supply of steam at a positive pressure is assured at all times; otherwise, when the pressure falls, the part of the coil above the water line ceases to function, and no circulation through the indirect heater will be obtained.

When electric heaters are used, ordinarily they consist of an electric heating element placed in the bottom of the tank and supplied with current through a thermostatically controlled switch. The amount of heat received from each kilowatt hour of current used is 3,415 Btu., so to heat 300 gal. of water through a range of 100 degrees will require in electric current

300 gal. × 8⅓ lb. × 100 Btu. / 3,415 Btu. or 79.6 kw.

The radiation from the tank, and line losses, must be allowed for the same as on any hot water system.

*Editor's Note: All readers are invited to submit ideas for cartoons, which, if suitable, will be drawn and reproduced in future issues. The idea for this month's cartoon was submitted by L. B. R., Chicago.

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One for Connecticut and Western Massachusetts and one for Maine and New Hampshire, to sell to the Plumbing Trade a full line of plumbing specialties and brass goods, including many patented items. A drawing account against commission to the right party. Address Key 284-D, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

WANTED MECHANICAL ENGINEER —At least three years' experience on ventilation layouts; good draftsman; some knowledge air conditioning and refrigerating. Splendid opportunity right man. Give detailed qualifications and references in first letter. Address Key 286-D, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

Situations Wanted

Situation Wanted

Plumber and Steamfitter, 30 Years of Age, Irish-American, protestant, strictly sober and industrious. About ten years' experience on jobbing work. Also stationary engineer. Desires work in first class shop. Have tools and car. Address Key 287-D, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

SALESMAN, ENGINEER, LICENSED New York City Plumber. Age 35. Nineteen years' experience. Traveled for Wholesale Supply, coaching, selling to plumbers. Wishes sales position. Anywhere. Reference. Address Key 277-D, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

Representatives Wanted

SALESMEN CONTACTING PLUMBING and heating trade and jobbing accounts to handle "Acmelene" Threading Oil, "Acme" Plumber's Lard Oil, and "Acme" Pipe Joint Compound—all well known products and designed exclusively for pipe and nipple work. THE ACME REFINING CO., W. 56th St. & W. & L. E. Ry., Cleveland, Ohio.

REPRESENTATIVE WANTED FOR Chicago and vicinity to sell "TYTE-UNYTE" pipe-joint cement in paste form to jobbers. Straight commission basis. Write J. C. WHITLAM MFG. CO., Wadsworth, Ohio.

MANUFACTURERS' REPRESENTAtive familiar with ventilation and capable of doing a sales and engineering job with an established line of Dual-Air Power Fans. Address Key 264-D, "Domestic Engineering," 1900 Prairie Ave., Chicago, Illinois.

ATTENTION SALESMEN—LIVE WIRE men to sell complete line cast brass goods from manufacturer direct to master plumbers on commission basis. All territories open. State experience, territory covered and other lines handled. Address Key 281-D, "Domestic Engineering," 1900 Prairie Ave., Chicago, Ill.

Business Opportunities

Salesmen - Dealers - Distributors—Wanted

An old established range oil burner manufacturer wants representative, in every state for national distribution, who is not afraid to work for his own interests. A real opportunity with a real income for a real producer. Address Diamond Oil Burner Mfg. Co., 262 Broadway, Providence, R. I.

For Sale

FOR SALE—SMALL PLUMBING AND heating business, Northern Indiana, near Chicago. Address Key 274-D, "Domestic Engineering," 1900 Prairie Ave., Chicago, Ill.

Business For Sale

Flourishing plumbing and heating business, established 20 years in Detroit residential suburb where 100 "better" homes have been built in past six months. Present building boom offers unlimited opportunities to any ambitious man. Owner must retire on account of ill health, will sell at sacrifice. Address Key 285-D, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

FOR SALE IN FLORIDA—PLUMBING-heating-sheet metal business established 17 years. General Electric Refrigerators, Oil Burners, Pumps. Do not reply unless interested in best Florida has to offer. Address Key 282-D, "Domestic Engineering," 1900 Prairie Ave., Chicago, Ill.

FOR SALE—PLUMBING AND HEATing in city of about four thousand. Good stock and equipment. Reason for selling—bad health. Address Key 278-D, "Domestic Engineering," 1900 Prairie Ave., Chicago, Ill.

FOR SALE—TWO MODEL 1—G-S-11 Ideal Gas Boilers, 1660 foot. Made American Radiator Company. Used one season. Price $250.00 F. O. B. Car. Write THE PREAS COMPANY, Preas Building, Johnson City, Tennessee.

FOR SALE IN A GOOD LIVE TOWN in lake region, good going hardware business. Good opportunity for live business man. Address Key 276-D, "Domestic Engineering," 1900 Prairie Avenue, Chicago, Illinois.

FOR SALE—PATENTED BALL COCK wrench. A real tool for getting at the screws and wing nuts on float and flush valves. The first patented tool of this type. If interested address Key 283-D, "Domestic Engineering," 1900 Prairie Ave., Chicago, Ill.

Miscellaneous

PIPE COUPLINGS

We can turn your old surplus pipe couplings into CASH or, if you need pipe couplings we can supply you from stock AT A SAVING. Write

Russell F. Kleinman

5315-17 No. 2nd St., Philadelphia, Pa.

WITH

HAROLD ELECTRIC MODEL E THAWER

Denver plumber in winter of 1929-30 thawed 300 services, $3,000.00 worth of business. A GOOD INVESTMENT. Order yours and really make money. Order now before the next freeze.

HAROLD ELECTRIC CO.

Walla Walla Washington

WE'VE GOT THE NAME; WE'VE GOT the organization; we've got the distribution channels; we've got the plant; we've got the engineering ability; we've got money. And we're looking for ideas of new developments in heating controls, oil burner controls, stoker controls, or heating or plumbing appliances. With your reply, give the nature or description of your development. Address Key 280-D, "Domestic Engineering," 1900 Prairie Ave., Chicago, Ill.

• SPOT CASH • for your SURPLUS PIPE COUPLINGS and THREAD PROTECTORS

Turn your dead stocks of couplings and thread protectors into cash. Write at once for simple shipping instructions and the highest market prices we will pay you for Pipe Couplings and Thread Protectors.

VALLEY STEEL PRODUCTS CO.

2700 So. First St. St. Louis, Mo.

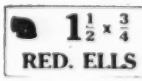
Job Tickets, Time Sheets

Contract Blanks, Estimate Sheets and other printed forms for plumbers our specialty. Reasonable prices and prompt attention to inquiries and orders. Write for samples.

LOUIS FINK & SONS CO.

Trades Building, Laurel Springs, N. J.

PLUMBERS' BIN LABELS



Send for samples and prices of card holders, bin labels, and free booklets: "How to Lay Out the Plumbing Shop." Haddon Bin Label Co., Haddon Heights, N. J.

Wanted to Buy

WANTED TO BUY OR RENT—A power threading machine from four inches down. Must be reasonable and in perfect condition. Address Key 269-D, "Domestic Engineering," 1900 Prairie Ave., Chicago, Ill.

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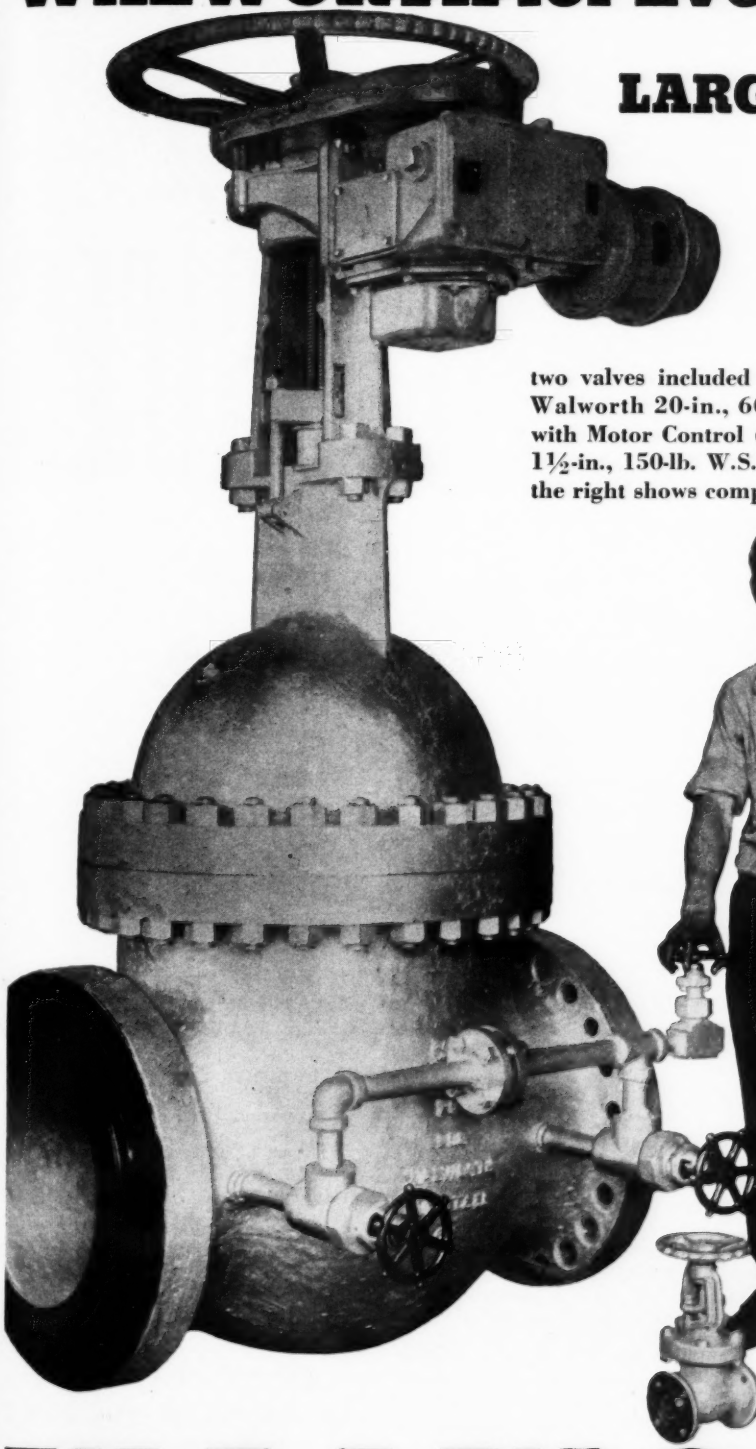
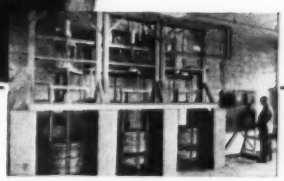
WALWORTH for Every Service—

LARGE OR SMALL



Whether the application calls for large or small flow . . . high or low temperature and pressure . . . Walworth provides the proper valve and fitting for any and every purpose. Typical of the Walworth line are the two valves included in this unretouched photograph: A Walworth 20-in., 600-lb. W.S.P. Cast Steel Gate Valve with Motor Control (total weight 4 tons) and a Walworth 1½-in., 150-lb. W.S.P. Cast Steel Gate Valve. The man at the right shows comparative sizes of the two valves.



PRE-PROVING WALWORTH QUALITY

Walworth Cast Steel is constantly tested with specially-designed apparatus, in the Walworth Laboratory. This Creep Test Machine, perfected and used exclusively by Walworth, is only one step in the predetermination of quality that insures perfect performance in the field.

Reports of these tests are available to engineers who are users of steel valves and fittings for high temperatures and pressures.

WALWORTH

VALVES FITTINGS and TOOLS
Backed by 94 Years' Service

WALWORTH COMPANY
60 EAST 42nd STREET, NEW YORK

DISTRIBUTORS IN PRINCIPAL CITIES THROUGHOUT THE WORLD

DON'T GRUMBLE ABOUT RISING PRICES

Stop them

During last two years... Rent up 15%... Food up 37%... Clothes up 22%—WHY?

Why do prices go up?

Here's one reason everybody can understand. Taxes are added into your rent. They're a big slice of your gas and electric bill. Gasoline averages 40% taxes. 53 taxes go into a loaf of bread. Everything you buy is a tax collector. Therefore prices go up when taxes go up.

Government spending now equals almost ⅓ of our national income!

Many government expenses are worthwhile. But probably a third of what national, state and local governments spend is wasted. That's five billion dollars, $166.00 for each family in America. If we don't *do something*, where will the waste stop? Ten billions? Twenty billions?

Don't blame the landlord and the grocer for the high cost of living. It's your own fault. Only you can stop government waste and promote economical, efficient government. This is how to do it; *take these two steps now:*

1. Make this resolution: "I will support no candidate who cannot prove that he has used all his influence to reduce government expenditures."

2. Write three letters. One to your Mayor, or County Clerk, one to your Governor, one to the President. Say: "*I want the cost of government reduced,*" and sign your name.

There are forty millions of us, working to pay for local, state and federal government. It's up to us to insist that the government watch its expenses as carefully as we do ours. After all, it's our money the tax wasters are spending.

DO YOUR PART TO BRING BACK ECONOMY IN GOVERNMENT

Register . . . Vote . . . Replace the wasters with lawmakers who will SAVE public money.

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